F5 ANPC Inverter Power Module

NXH600A100H4F5

The NXH600A100H4F5SNG is a power module containing high−performance IGBTs with rugged anti−parallel diodes. The module also contains an on−board thermistor.

Features

- Extremely Efficient Trench with Field Stop Technology
- Low Switching Loss Reduces System Power Dissipation
- F5 Package with Solder Pins

Typical Applications

- Solar Inverter
- Uninterruptible Power Supplies

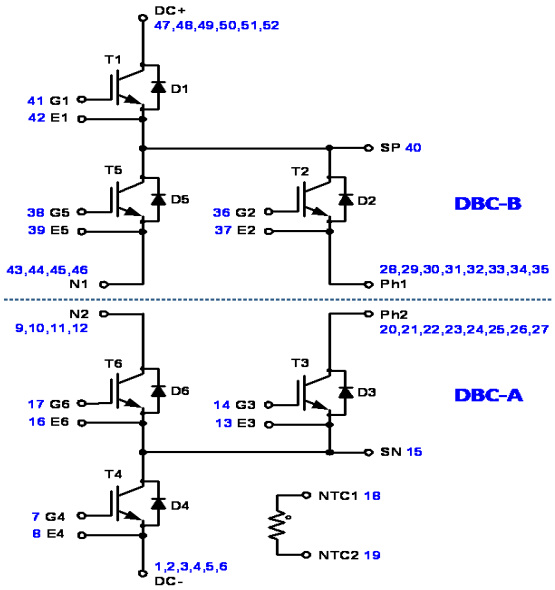
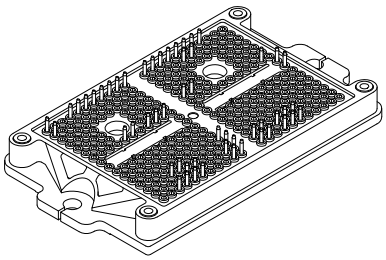
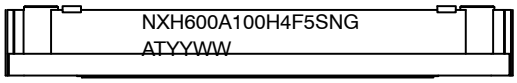


Figure 1. NXH600A100H4F5SNG Schematic Diagram



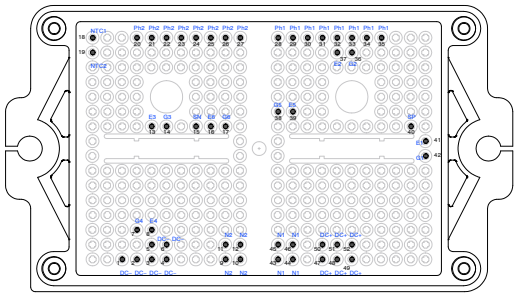
F5 PACKAGE
CASE 180CL
SOLDER PINS

MARKING DIAGRAM



NXH600A100H4F5SNG = Specific Device Code
AT = Assembly & Test Site Code
YYWW = Year and Work Week Code

PIN CONNECTIONS



ORDERING INFORMATION

See detailed ordering and shipping information on page 6 of this data sheet.

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Table 1. ABSOLUTE MAXIMUM RATINGS (Note 1) T_J = 25°C unless otherwise noted

Rating	Symbol	Value	Unit
T1, T4			
Collector−Emitter Voltage	V_{CES}	1000	V
Gate−Emitter Voltage Positive Transient Gate−Emitter Voltage (T_{pulse} = 5 μs, D < 0.10 @ $T_J \le 150°C$)	V_{GE}	±20 30	V
Continuous Collector Current @ T_C = 80°C (T_J = 175°C)	I_C	485	A
Pulsed Collector Current (T_J = 175°C)	I_{Cpulse}	1455	A
Maximum Power Dissipation @ T_C = 80°C (T_J = 175°C)	P_{tot}	1357	W
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	175	°C
D1, D4			
Peak Repetitive Reverse Voltage	V_{RRM}	1200	V
Continuous Forward Current @ T_C = 80°C (T_J = 175°C)	I_F	123	A
Repetitive Peak Forward Current (T_J = 175°C, t_p limited by T_{Jmax})	I_{FRM}	369	A
Power Dissipation Per Diode @ T_C = 80°C (T_J = 175°C)	P_{tot}	317	W
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	175	°C
T5, T6			
Collector−Emitter Voltage	V_{CES}	1000	V
Gate−Emitter Voltage Positive Transient Gate−Emitter Voltage (T_{pulse} = 5 μs, D < 0.10 @ $T_J \le 150°C$)	V_{GE}	±20 30	V
Continuous Collector Current @ T_C = 80°C (T_J = 175°C)	I_C	156	A
Pulsed Collector Current (T_J = 175°C)	I_{Cpulse}	468	A
Maximum Power Dissipation @ T_C = 80°C (T_J = 175°C)	P_{tot}	432	W
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	175	°C
D5, D6			
Peak Repetitive Reverse Voltage	V_{RRM}	1200	V
Continuous Forward Current @ T_C = 80°C (T_J = 175°C)	I_F	119	A
Repetitive Peak Forward Current (T_J = 175°C, t_p limited by T_{Jmax})	I_{FRM}	357	A
Power Dissipation Per Diode @ T_C = 80°C (T_J = 175°C)	P_{tot}	365	W
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	175	°C
T2, T3			
Collector−Emitter Voltage	V_{CES}	1000	V
Gate−Emitter Voltage Positive Transient Gate−Emitter Voltage (T_{pulse} = 5 μs, D < 0.10 @ $T_J \le 150°C$)	V_{GE}	±20 30	V
Continuous Collector Current @ T_C = 80°C (T_J = 175°C)	I_C	542	A
Pulsed Collector Current (T_J = 175°C)	I_{Cpulse}	1626	A
Maximum Power Dissipation @ T_C = 80°C (T_J = 175°C)	P_{tot}	1188	W
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	175	°C

Table 1. ABSOLUTE MAXIMUM RATINGS (Note 1) T_J = 25°C unless otherwise noted

Rating	Symbol	Value	Unit
D2, D3			
Peak Repetitive Reverse Voltage	V_{RRM}	1000	V
Continuous Forward Current @ T_C = 80°C (T_J = 175°C)	I_F	190	A
Repetitive Peak Forward Current (T_J = 175°C, t_p limited by T_{Jmax})	I_{FRM}	570	A
Power Dissipation Per Diode @ T_C = 80°C (T_J = 175°C)	P_{tot}	432	W
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	175	°C
THERMAL PROPERTIES			
Storage Temperature range	T_{stg}	−40 to 130	°C
INSULATION PROPERTIES			
Isolation test voltage, t = 1 sec, 50 Hz	Vis	3000	V_{RMS}
Creepage distance		12.7	mm
Comparative Tracking Index	CTI	>500	

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Refer to ELECTRICAL CHARACTERISTICS, RECOMMENDED OPERATING RANGES and/or APPLICATION INFORMATION for Safe Operating parameters.

Table 2. RECOMMENDED OPERATING RANGES

Rating	Symbol	Min	Max	Unit
Module Operating Junction Temperature	T_J	−40	150	°C

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

Table 3. ELECTRICAL CHARACTERISTICS T_J = 25°C unless otherwise noted

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
T1, T4						
Collector−Emitter Cutoff Current	V_{GE} = 0 V, V_{CE} = 1000 V	I_{CES}	–	–	300	μA
Collector−Emitter Saturation Voltage	V_{GE} = 15 V, I_C = 600 A, T_J = 25°C	$V_{CE(sat)}$	–	1.8	2.6	V
	V_{GE} = 15 V, I_C = 600 A, T_J = 175°C		–	2.2	–	
Gate−Emitter Threshold Voltage	V_{GE} = V_{CE}, I_C = 600 mA	$V_{GE(TH)}$	3.9	5	6.1	V
Gate Leakage Current	V_{GE} = 20 V, V_{CE} = 0 V	I_{GES}	–	–	2	μA
Turn−on Delay Time	T_J = 25°C V_{CE} = 600 V, I_C = 235 A V_{GE} = −8 V,15 V, R_G = 10 Ω	$t_{d(on)}$	–	190	–	ns
Rise Time		t_r	–	64	–	
Turn−off Delay Time		$t_{d(off)}$	–	697	–	
Fall Time		t_f	–	34	–	
Turn−on Switching Loss per Pulse		E_{on}	–	8	–	mJ
Turn−off Switching Loss per Pulse		E_{off}	–	8.98	–	
Turn−on Delay Time	T_J = 125°C V_{CE} = 600 V, I_C = 235A V_{GE} = −8 V,15 V, R_G = 10 Ω	$t_{d(on)}$	–	174	–	ns
Rise Time		t_r	–	71	–	
Turn−off Delay Time		$t_{d(off)}$	–	755	–	
Fall Time		t_f	–	68	–	
Turn−on Switching Loss per Pulse		E_{on}	–	8.54	–	mJ
Turn−off Switching Loss per Pulse		E_{off}	–	11.54	–	

Table 3. ELECTRICAL CHARACTERISTICS T_J = 25°C unless otherwise noted

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
T1, T4						
Input Capacitance	V_{CE} = 20 V, V_{GE} = 0 V, f = 1 MHz	C_{ies}	–	39138	–	pF
Output Capacitance		C_{oes}	–	1518	–	
Reverse Transfer Capacitance		C_{res}	–	78	–	
Total Gate Charge	V_{CE} = 600 V, I_C = 600 A, V_{GE} = ±15 V	Q_g	–	1956	–	nC
Thermal Resistance – chip–to–case		R_{thJC}	–	0.07	–	°C/W
Thermal Resistance – chip–to–heatsink	Thermal grease, Thickness ≈ 57 μm, λ = 2.87 W/mK	R_{thJH}	–	0.21	–	°C/W
D1, D4						
Diode Forward Voltage	I_F = 150 A, T_J = 25°C	V_F	–	2.7	3.5	V
	I_F = 150 A, T_J = 175°C		–	1.9	–	
Reverse Recovery Time	T_J = 25°C V_{CE} = 600 V, I_C = 230A V_{GE} = –8 V, 15 V, R_G = 10Ω	t_{rr}	–	130	–	ns
Reverse Recovery Charge		Q_{rr}	–	4305	–	nC
Peak Reverse Recovery Current		I_{RRM}	–	79	–	A
Peak Rate of Fall of Recovery Current		di/dt	–	1858	–	A/μs
Reverse Recovery Energy		E_{rr}	–	1334	–	μJ
Reverse Recovery Time	T_J = 125°C V_{CE} = 600 V, I_C = 230 A V_{GE} = –8 V, 15 V, R_G = 10 Ω	t_{rr}	–	250	–	ns
Reverse Recovery Charge		Q_{rr}	–	12241	–	nC
Peak Reverse Recovery Current		I_{RRM}	–	137	–	A
Peak Rate of Fall of Recovery Current		di/dt	–	1747	–	A/μs
Reverse Recovery Energy		E_{rr}	–	4615	–	μJ
Thermal Resistance – chip–to–case		R_{thJC}	–	0.30	–	°C/W
Thermal Resistance – chip–to–heatsink	Thermal grease, Thickness ≈ 57 μm, λ = 2.87 W/mK	R_{thJH}	–	0.58	–	°C/W
T5, T6						
Collector–Emitter Cutoff Current	V_{GE} = 0 V, V_{CE} = 1000 V	I_{CES}	–	–	700	μA
Collector–Emitter Saturation Voltage	V_{GE} = 15 V, I_C = 200 A, T_J = 25°C	$V_{CE(sat)}$	–	1.8	2.6	V
	V_{GE} = 15 V, I_C = 200 A, T_J = 175°C		–	2.2	–	
Gate–Emitter Threshold Voltage	V_{GE} = V_{CE}, I_C = 200 mA	$V_{GE(TH)}$	3.9	5	6.1	V
Gate Leakage Current	V_{GE} = 20 V, V_{CE} = 0 V	I_{GES}	–	–	1	μA
Turn–on Delay Time	T_J = 25°C V_{CE} = 600 V, I_C = 90 A V_{GE} = –8 V, 15 V, R_G = 10 Ω	$t_{d(on)}$	–	139	–	ns
Rise Time		t_r	–	27	–	
Turn–off Delay Time		$t_{d(off)}$	–	533	–	
Fall Time		t_f	–	17	–	
Turn–on Switching Loss per Pulse		E_{on}	–	3.9	–	mJ
Turn–off Switching Loss per Pulse		E_{off}	–	1.6	–	
Turn–on Delay Time	T_J = 125°C V_{CE} = 600 V, I_C = 90 A V_{GE} = –8 V, 15 V, R_G = 10 Ω	$t_{d(on)}$	–	140	–	ns
Rise Time		t_r	–	27	–	
Turn–off Delay Time		$t_{d(off)}$	–	602	–	
Fall Time		t_f	–	48	–	
Turn–on Switching Loss per Pulse		E_{on}	–	6.4	–	mJ
Turn–off Switching Loss per Pulse		E_{off}	–	3	–	

Table 3. ELECTRICAL CHARACTERISTICS T_J = 25°C unless otherwise noted

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
T5, T6						
Input Capacitance	V_{CE} = 20 V, V_{GE} = 0 V, f = 1 MHz	C_{ies}	–	13046	–	pF
Output Capacitance		C_{oes}	–	506	–	
Reverse Transfer Capacitance		C_{res}	–	52	–	
Total Gate Charge	V_{CE} = 600 V, I_C = 200 A, V_{GE} = ±15 V	Q_g	–	652	–	nC
Thermal Resistance – chip–to–case		R_{thJC}	–	0.22	–	°C/W
Thermal Resistance – chip–to–heatsink	Thermal grease, Thickness ≈ 57 μm, λ = 2.87 W/mK	R_{thJH}	–	0.48	–	°C/W
D5, D6						
Diode Forward Voltage	I_F = 100 A, T_J = 25°C	V_F	–	1.5	2	V
	I_F = 100 A, T_J = 175°C		–	2.2	–	
Reverse Recovery Time	T_J = 25°C V_{CE} = 600 V, I_C = 235 A V_{GE} = –8 V,15 V, R_G = 10 Ω	t_{rr}	–	24	–	ns
Reverse Recovery Charge		Q_{rr}	–	488	–	nC
Peak Reverse Recovery Current		I_{RRM}	–	34	–	A
Peak Rate of Fall of Recovery Current		di/dt	–	2981	–	A/μs
Reverse Recovery Energy		E_{rr}	–	116	–	μJ
Reverse Recovery Time	T_J = 125°C V_{CE} = 600 V, I_C = 235 A V_{GE} = –8 V,15 V, R_G = 10 Ω	t_{rr}	–	26	–	ns
Reverse Recovery Charge		Q_{rr}	–	525	–	nC
Peak Reverse Recovery Current		I_{RRM}	–	33	–	A
Peak Rate of Fall of Recovery Current		di/dt	–	2712	–	A/μs
Reverse Recovery Energy		E_{rr}	–	120	–	μJ
Thermal Resistance – chip–to–case		R_{thJC}	–	0.25	–	°C/W
Thermal Resistance – chip–to–heatsink	Thermal grease, Thickness ≈ 57 μm, λ = 2.87 W/mK	R_{thJH}	–	0.55	–	°C/W
T2, T3						
Collector–Emitter Cutoff Current	V_{GE} = 0 V, V_{CE} = 1000 V	I_{CES}	–	–	300	μA
Collector–Emitter Saturation Voltage	V_{GE} = 15 V, I_C = 500 A, T_J = 25°C	$V_{CE(sat)}$	–	1.3	2.1	V
	V_{GE} = 15 V, I_C = 500 A, T_J = 175°C		–	1.4	–	
Gate–Emitter Threshold Voltage	V_{GE} = V_{CE}, I_C = 500 mA	$V_{GE(TH)}$	3.2	4.6	5.5	V
Gate Leakage Current	V_{GE} = 20 V, V_{CE} = 0 V	I_{GES}	–	–	2	μA
Turn–on Delay Time	T_J = 25°C V_{CE} = 600 V, I_C = 230 A V_{GE} = –8 V, 15 V, R_G = 10 Ω	$t_{d(on)}$	–	304	–	ns
Rise Time		t_r	–	101	–	
Turn–off Delay Time		$t_{d(off)}$	–	2925	–	
Fall Time		t_f	–	111	–	
Turn–on Switching Loss per Pulse		E_{on}	–	15	–	mJ
Turn–off Switching Loss per Pulse		Eoff	–	23	–	
Turn–on Delay Time	T_J = 125°C V_{CE} = 600 V, I_C = 230 A V_{GE} = –8 V, 15 V, R_G = 10 Ω	$t_{d(on)}$	–	264	–	ns
Rise Time		t_r	–	108	–	
Turn–off Delay Time		$t_{d(off)}$	–	3069	–	
Fall Time		t_f	–	134	–	
Turn–on Switching Loss per Pulse		E_{on}	–	18	–	mJ
Turn–off Switching Loss per Pulse		E_{off}	–	26	–	

Table 3. ELECTRICAL CHARACTERISTICS T_J = 25°C unless otherwise noted

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
T2, T3						
Input Capacitance	V_{CE} = 20 V, V_{GE} = 0 V, f = 1 MHz	C_{ies}	–	104784	–	pF
Output Capacitance		C_{oes}	–	1705	–	
Reverse Transfer Capacitance		C_{res}	–	789	–	
Total Gate Charge	V_{CE} = 600 V, I_C = 500 A, V_{GE} = ±15 V	Q_g	–	8700	–	nC
Thermal Resistance – chip–to–case		R_{thJC}	–	0.08	–	°C/W
Thermal Resistance – chip–to–heatsink	Thermal grease, Thickness ≈ 57 μm, λ = 2.87 W/mK	R_{thJH}	–	0.20	–	°C/W
D2, D3						
Diode Forward Voltage	I_F = 150 A, T_J = 25°C	V_F	–	2.1	2.5	V
	I_F = 150 A, T_J = 175°C		–	1.7	–	
Thermal Resistance – chip–to–case		R_{thJC}	–	0.22	–	°C/W
Thermal Resistance – chip–to–heatsink	Thermal grease, Thickness ≈ 57 μm, λ = 2.87 W/mK	R_{thJH}	–	0.44	–	°C/W
THERMISTOR CHARACTERISTICS						
Nominal resistance		R_{25}	–	22	–	kΩ
Nominal resistance	T = 100°C	R_{100}	–	1486	–	Ω
Deviation of R25		ΔR/R	–5	–	5	%
Power dissipation		P_D	–	200	–	mW
Power dissipation constant			–	2	–	mW/K
B–value	B(25/50), tolerance ±3%		–	3950	–	K
B–value	B(25/100), tolerance ±3%		–	3998	–	K

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

ORDERING INFORMATION

Orderable Part Number	Marking	Package	Shipping
NXH600A100H4F5SNG F5 SOLDER PINS	NXH600A100H4F5SNG	F5 – Case 180CL (Pb–Free and Halide–Free, Solder Pins)	8 Units / Blister Tray

TYPICAL DC CHARACTERISTICS – T1, T4 IGBT & D1, D4 INVERSE DIODE

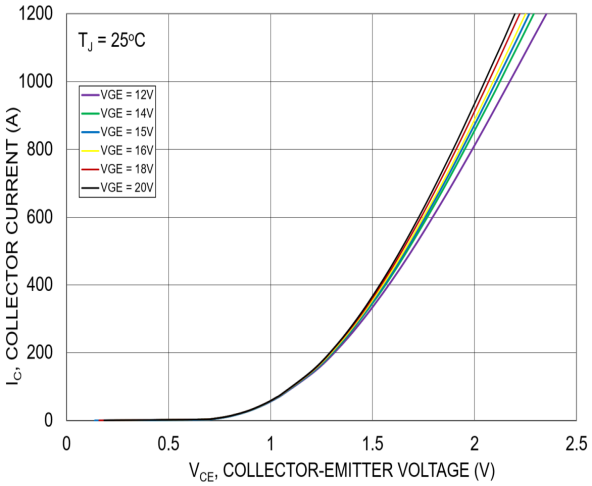


Figure 2. Typical Output Characteristics

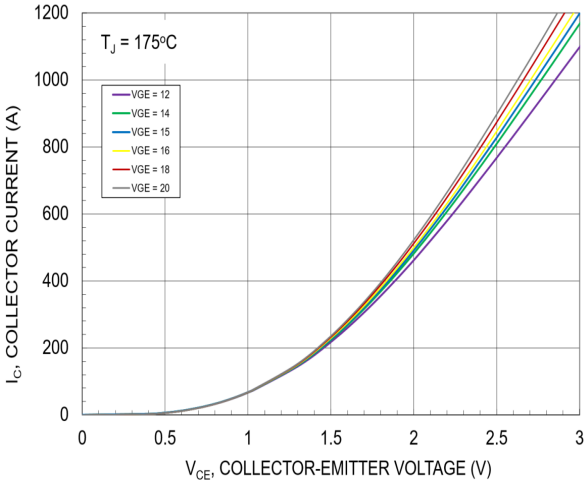


Figure 3. Typical Output Characteristics

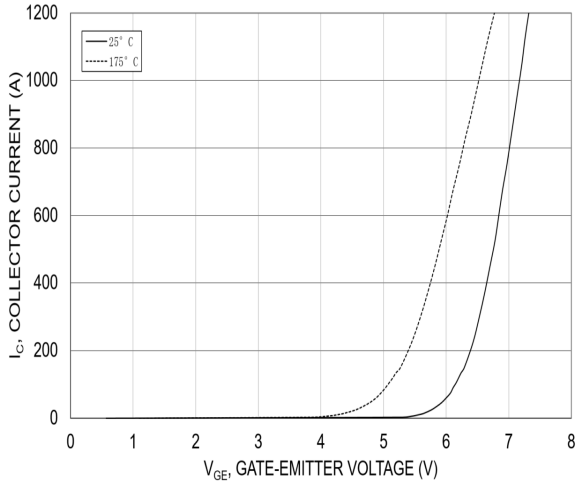


Figure 4. Typical Transfer Characteristics

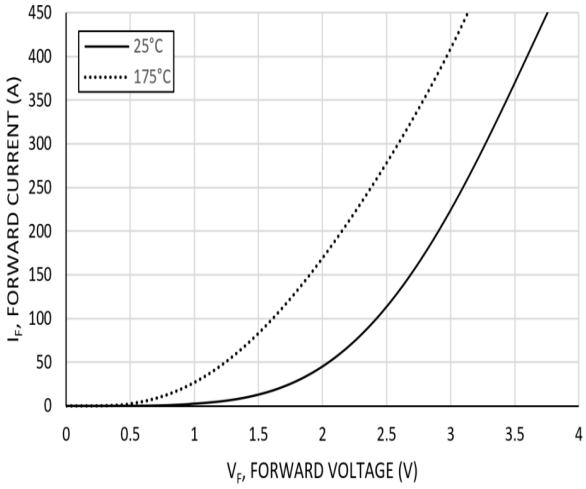


Figure 5. Inverse Diode Forward Characteristics

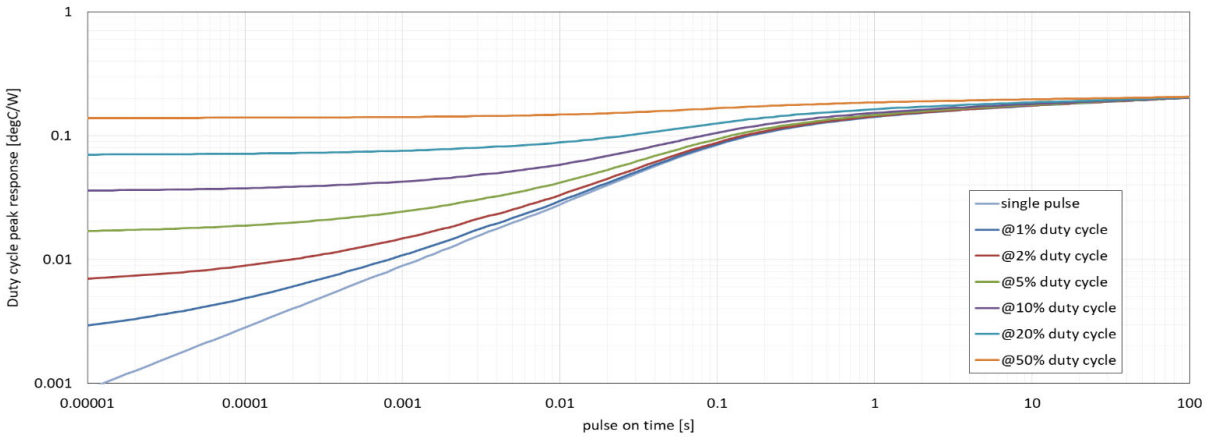


Figure 6. IGBT Junction−to−Heatsink Transient Thermal Impedance

TYPICAL DC CHARACTERISTICS – T1, T4 IGBT & D1, D4 INVERSE DIODE

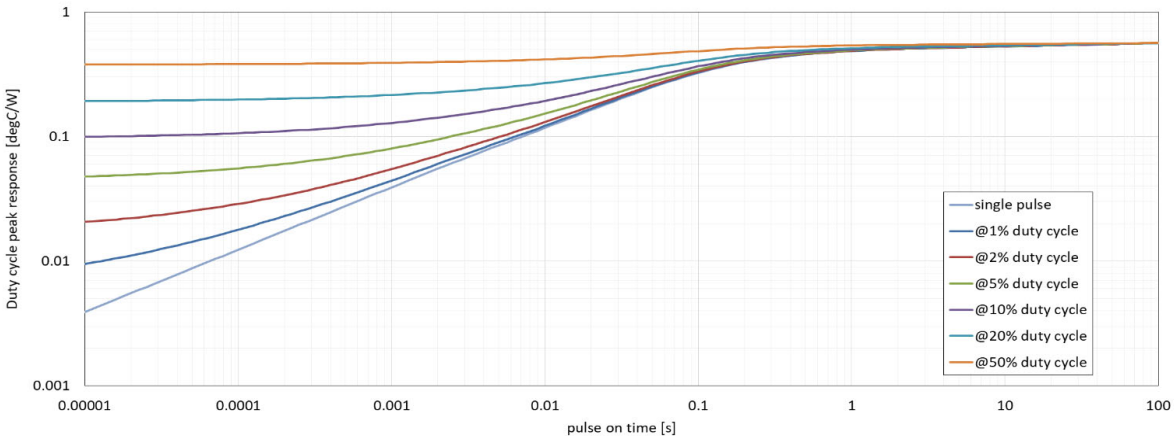


Figure 7. Inverse Diode Junction−to−Heatsink Transient Thermal Impedance

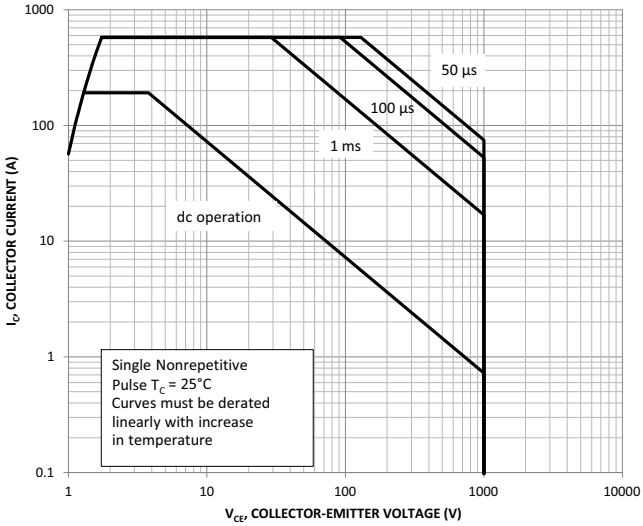


Figure 8. IGBT FBSOA

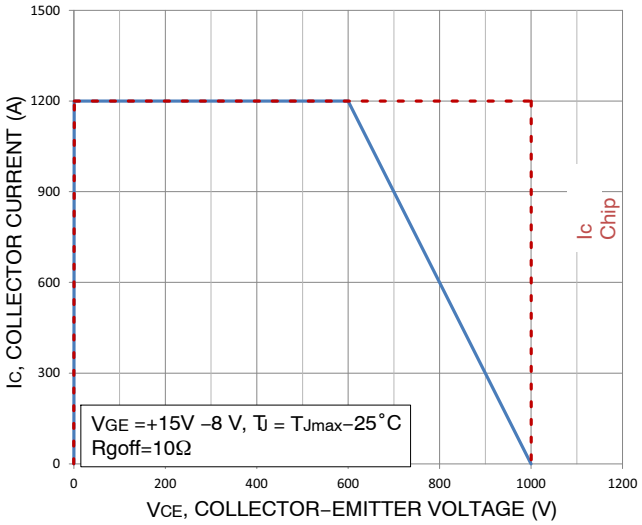


Figure 9. IGBT RBSOA

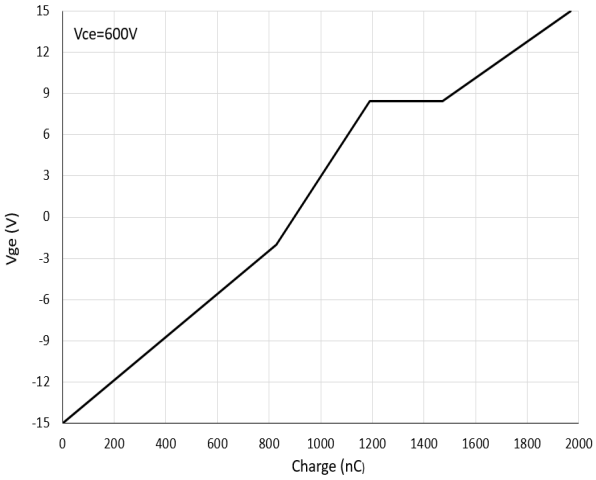


Figure 10. IGBT Gate Voltage vs. Gate Charge

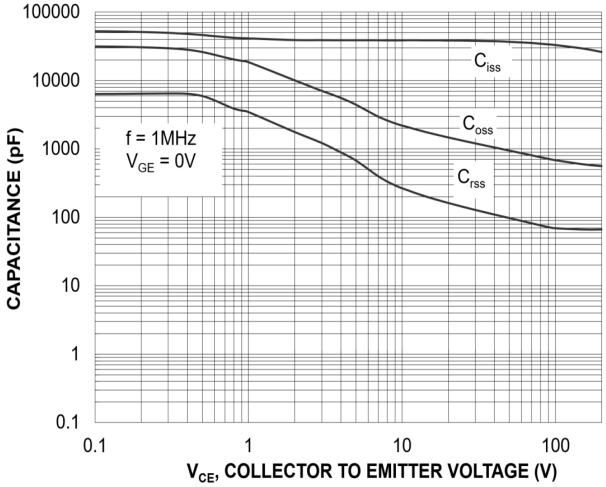


Figure 11. IGBT Capacitance Charge

TYPICAL DC CHARACTERISTICS – T5, T6 IGBT & D5, D6 INVERSE DIODE

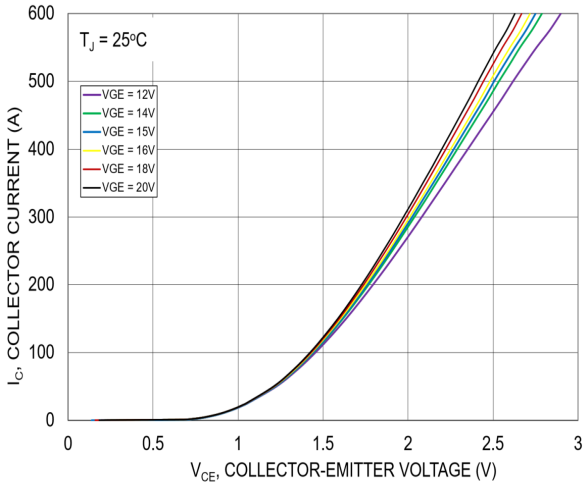


Figure 12. Typical Output Characteristics

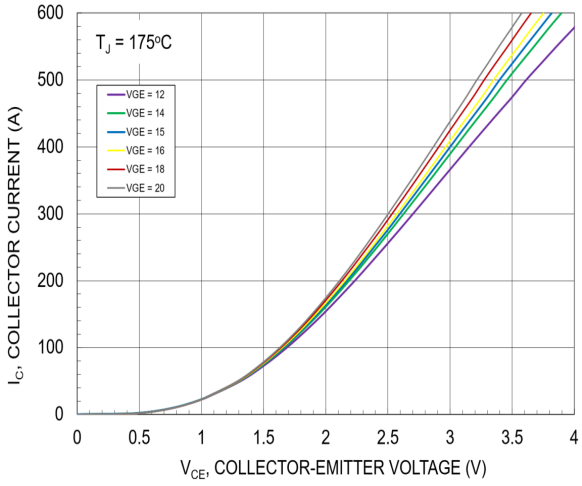


Figure 13. Typical Output Characteristics

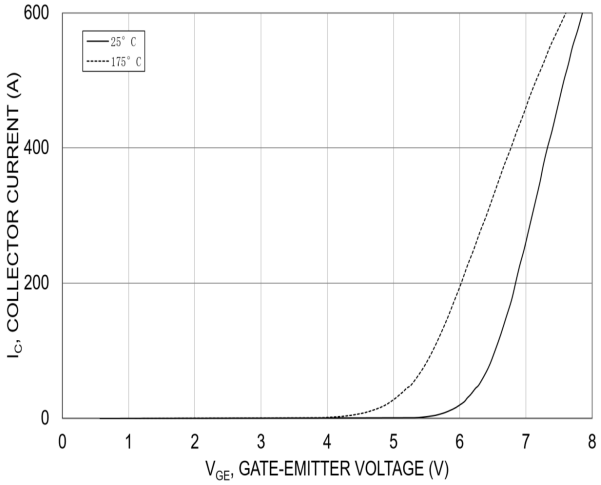


Figure 14. Typical Transfer Characteristics

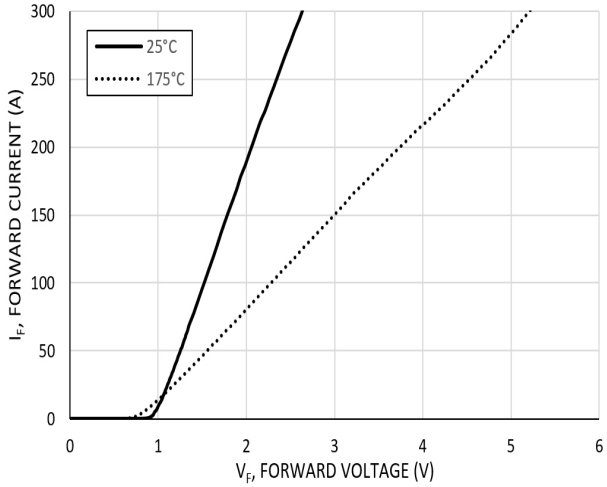


Figure 15. Inverse Diode Forward Characteristics

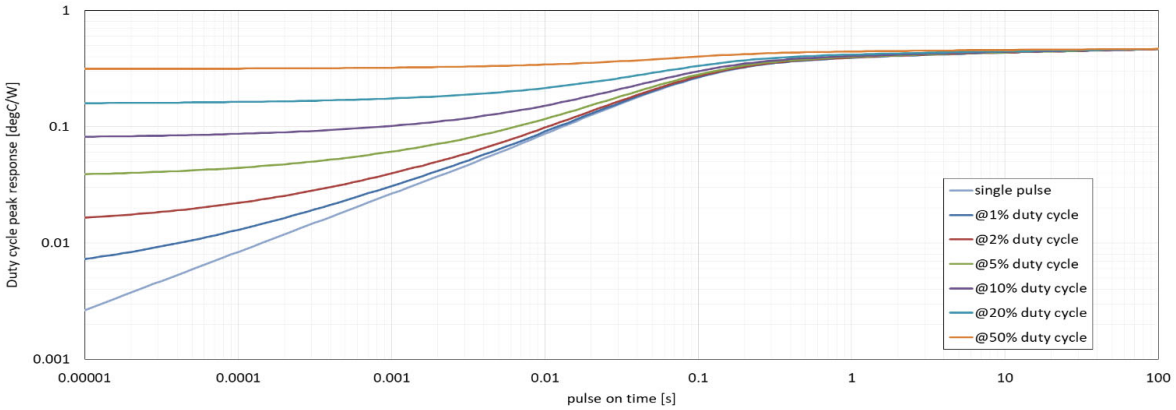


Figure 16. IGBT Junction−to−Heatsink Transient Thermal Impedance

TYPICAL DC CHARACTERISTICS – T5, T6 IGBT & D5, D6 INVERSE DIODE

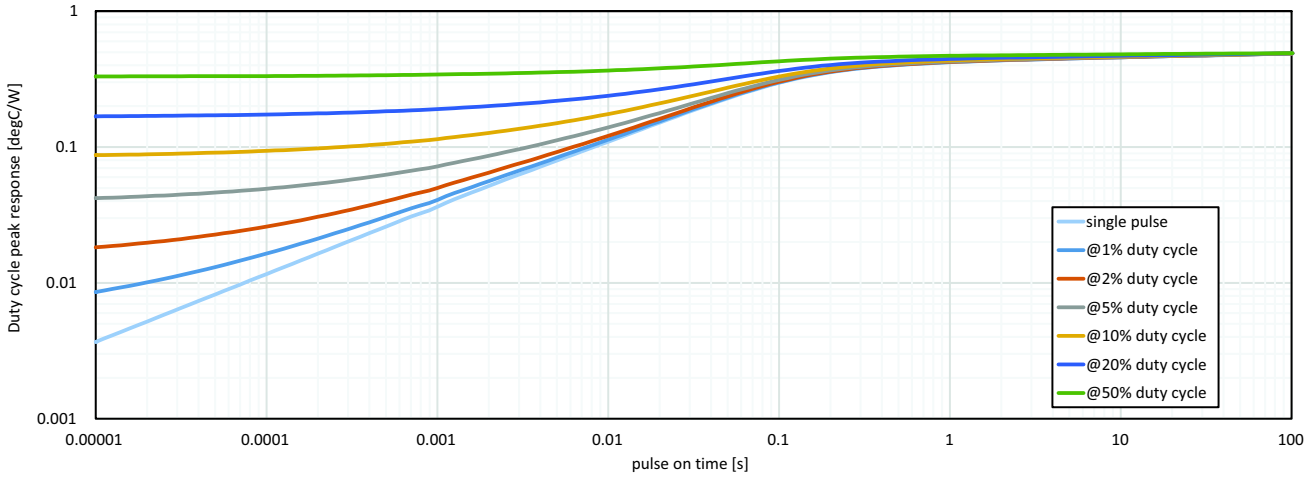


Figure 17. Inverse Diode Junction−to−Heatsink Transient Thermal Impedance

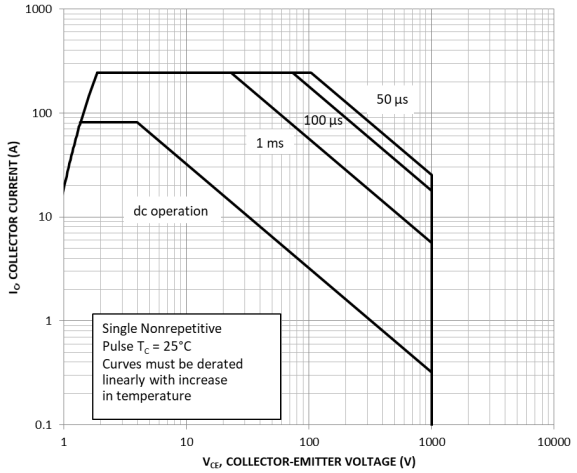


Figure 18. IGBT FBSOA

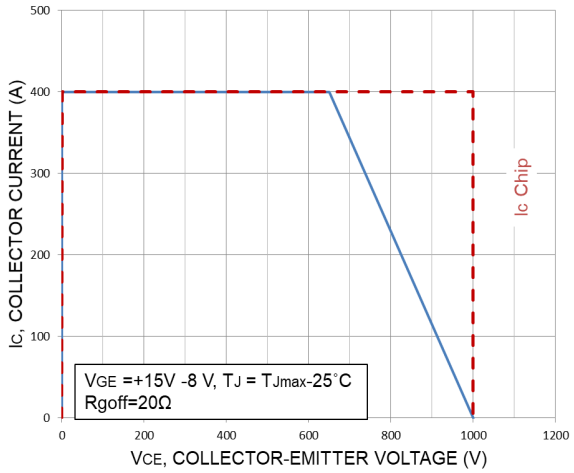


Figure 19. IGBT RBSOA

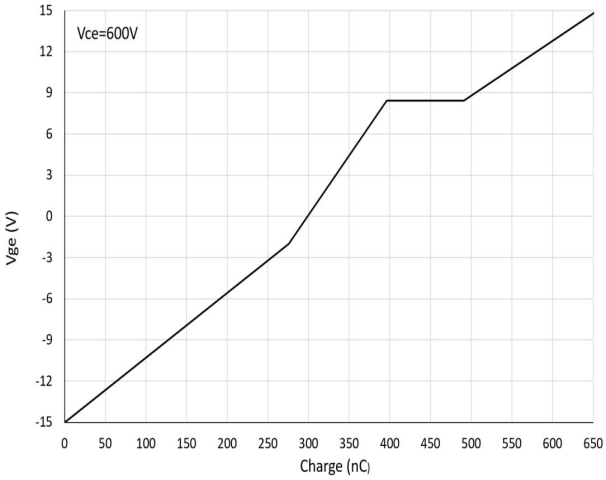


Figure 20. IGBT Gate Voltage vs. Gate Charge

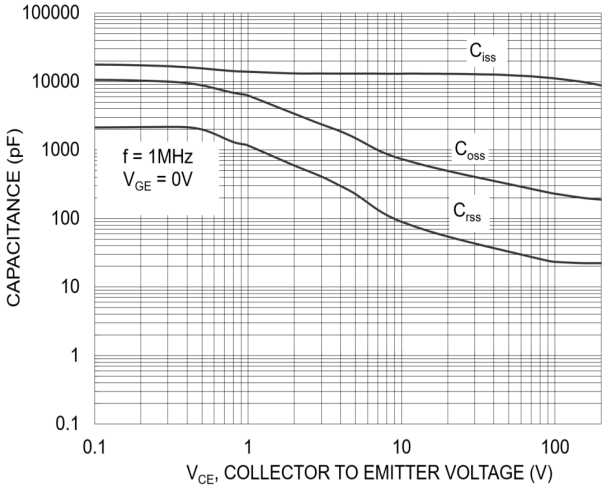


Figure 21. IGBT Capacitance Charge

TYPICAL DC CHARACTERISTICS – T2, T3 IGBT & D2, D3 INVERSE DIODE

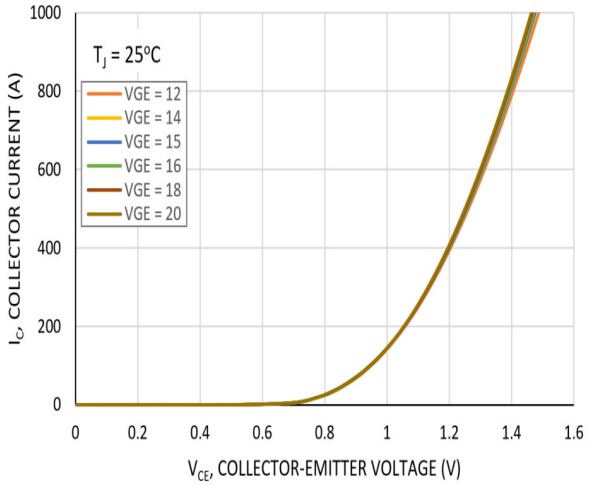


Figure 22. Typical Output Characteristics

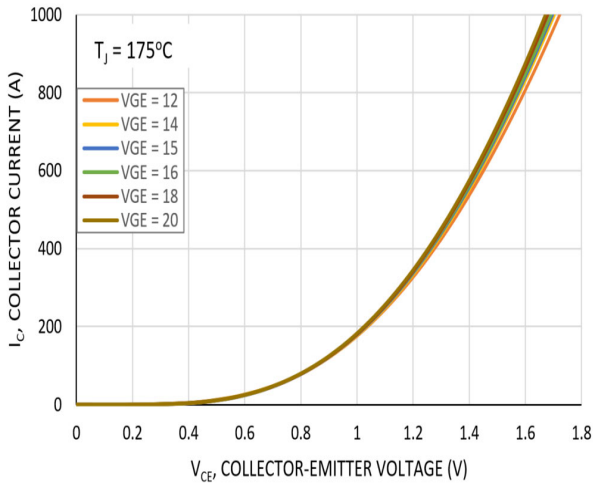


Figure 23. Typical Output Characteristics

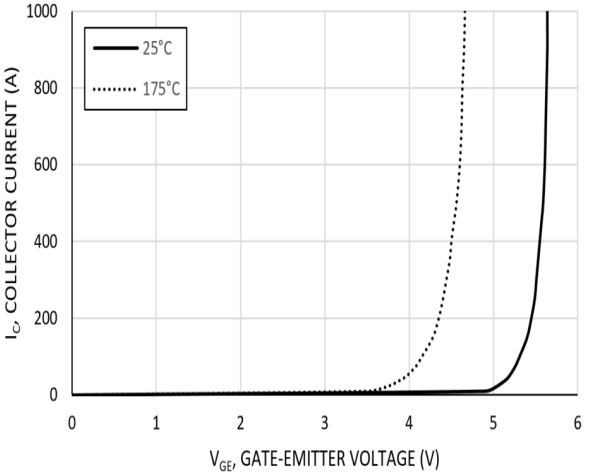


Figure 24. Typical Transfer Characteristics

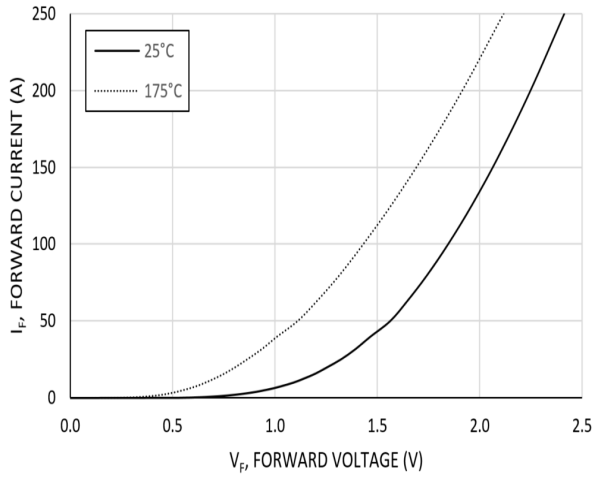


Figure 25. Inverse Diode Forward Characteristics

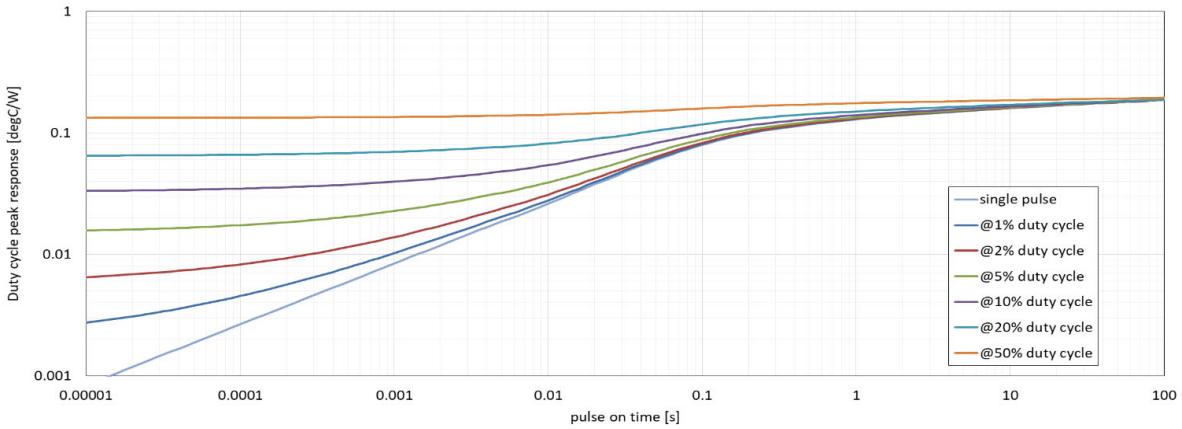


Figure 26. IGBT Junction−to−Heatsink Transient Thermal Impedance

TYPICAL DC CHARACTERISTICS – T2, T3 IGBT & D2, D3 INVERSE DIODE

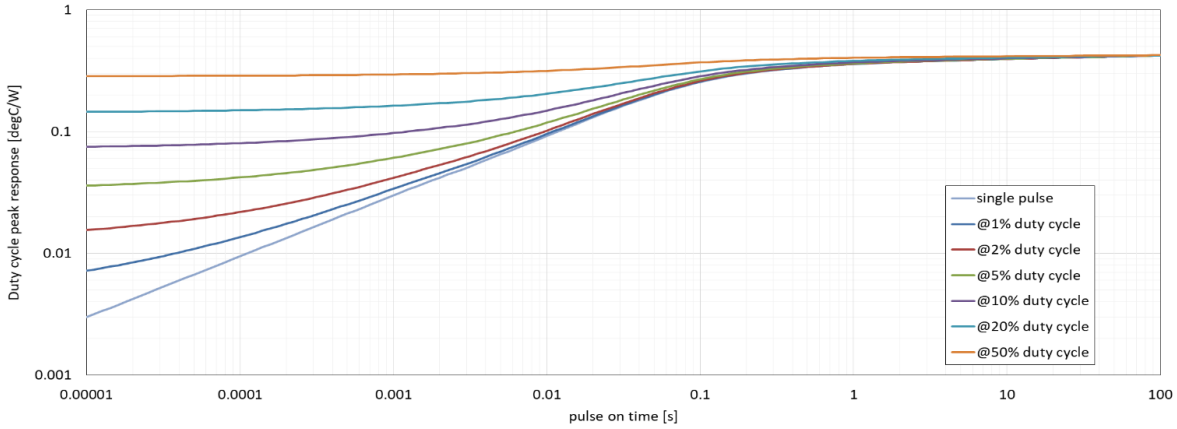


Figure 27. Inverse Diode Junction−to−Heatsink Transient Thermal Impedance

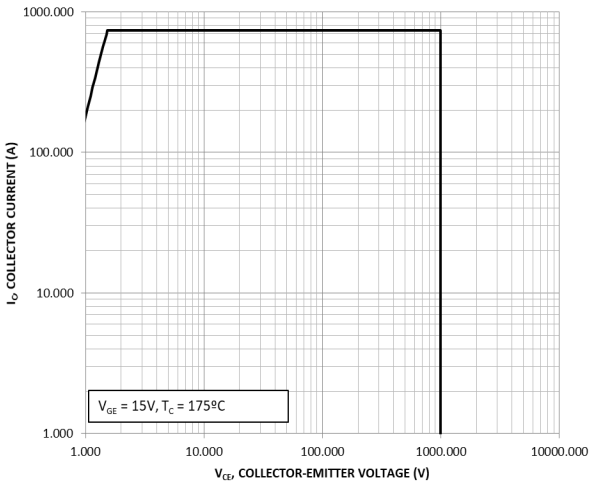


Figure 28. IGBT FBSOA

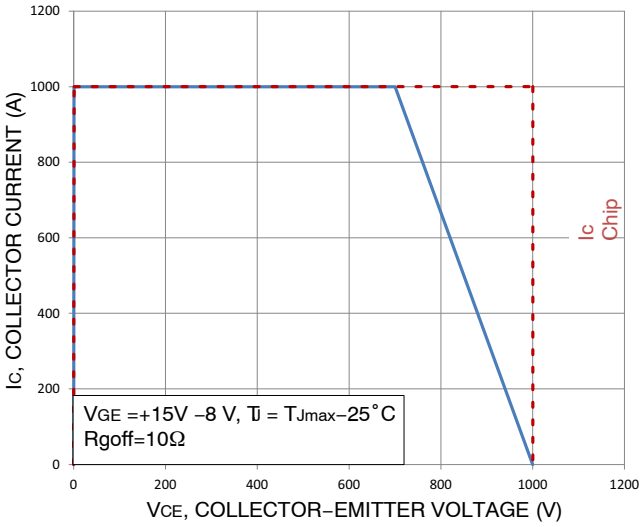


Figure 29. IGBT RBSOA

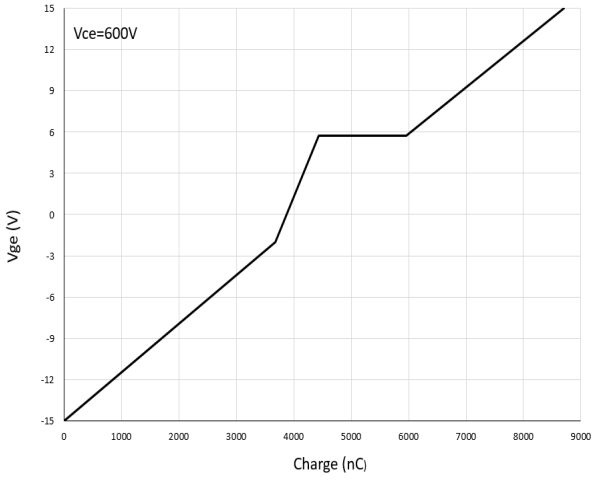


Figure 30. IGBT Gate Voltage vs. Gate Charge

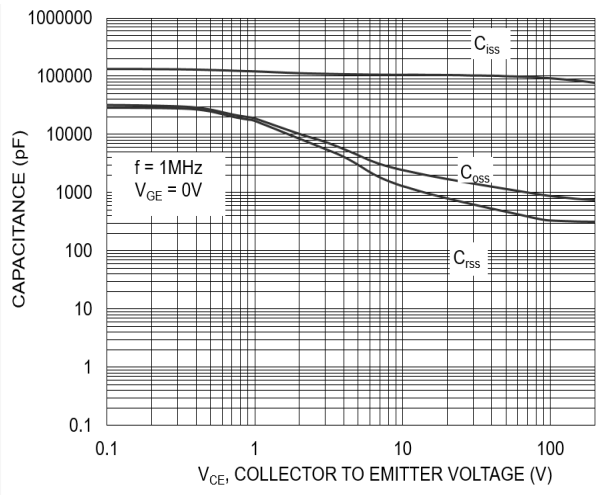


Figure 31. IGBT Capacitance Charge

TYPICAL SWITCHING CHARACTERISTICS – T1, T4 IGBT COMMUTATE D5, D6 INVERSE DIODE

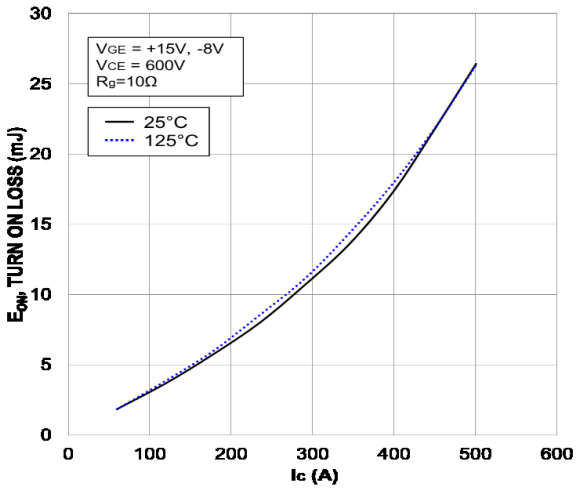


Figure 32. Typical Turn On Loss Versus IC

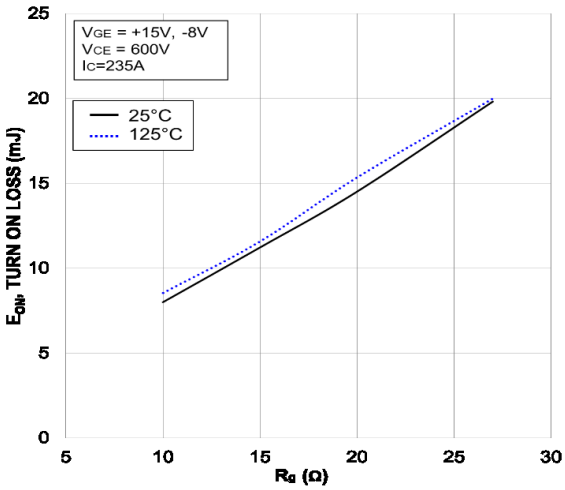


Figure 33. Typical Turn On Loss Versus Rg

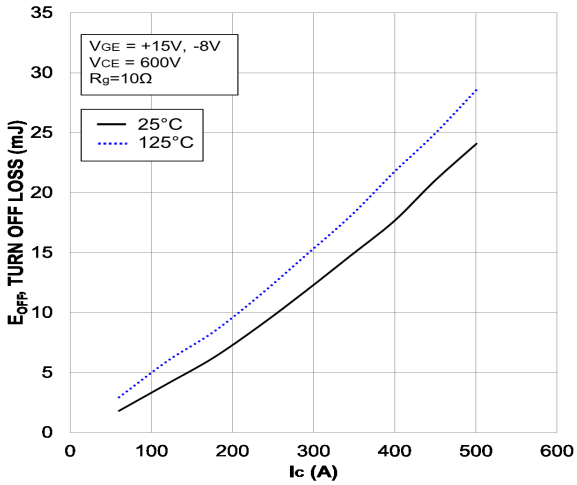


Figure 34. Typical Turn Off Loss vs. IC

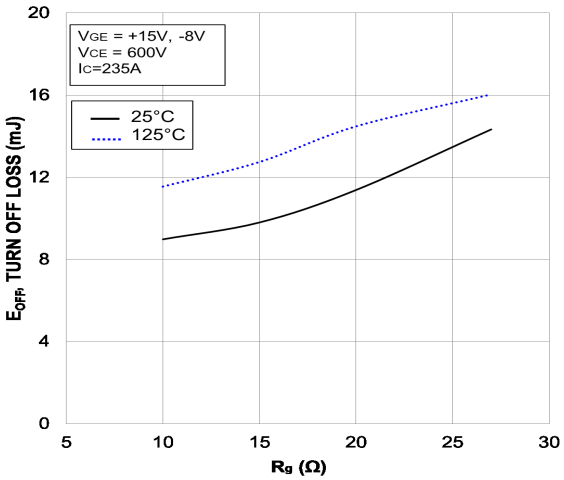


Figure 35. Typical Turn Off Loss vs. Rg

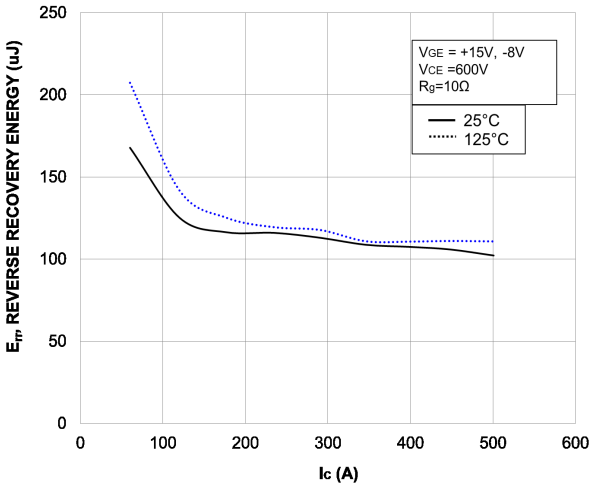


Figure 36. Typical Reverse Recovery Loss vs. IC

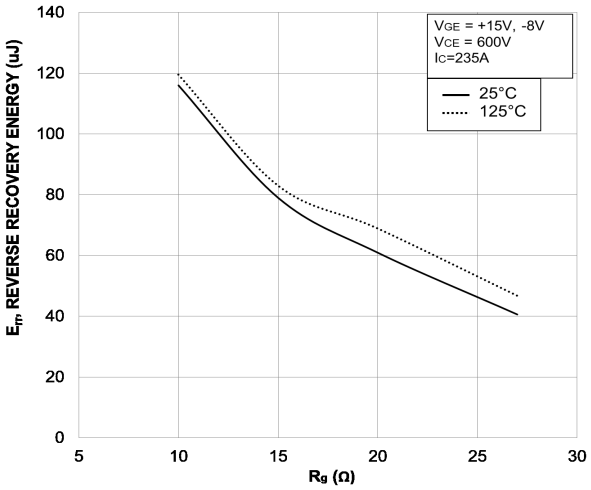


Figure 37. Typical Reverse Recovery Loss vs. Rg

TYPICAL SWITCHING CHARACTERISTICS – T1, T4 IGBT COMMUTATE D5, D6 INVERSE DIODE

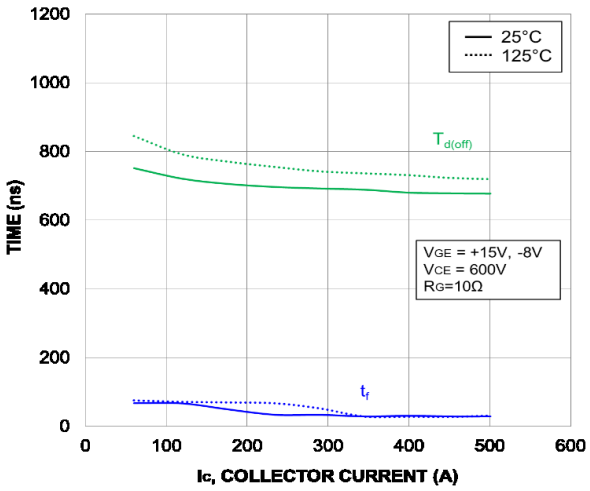


Figure 38. Typical Turn−Off Switching Time vs. IC

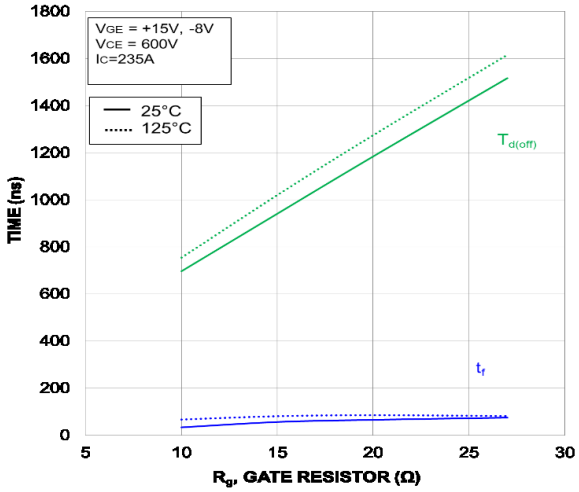


Figure 39. Typical Turn−Off Switching Time vs. Rg

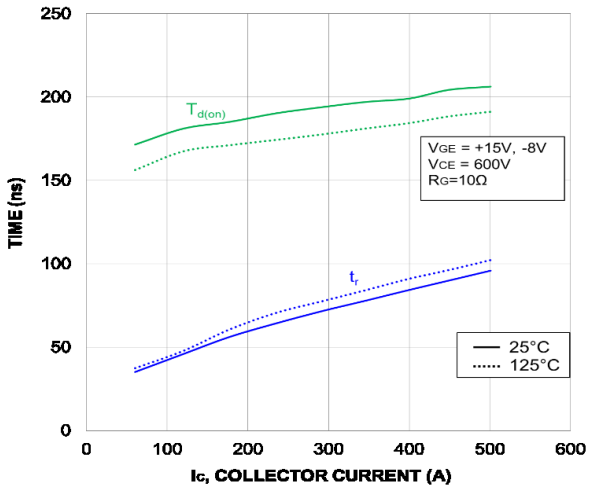


Figure 40. Typical Turn−On Switching Time vs. IC

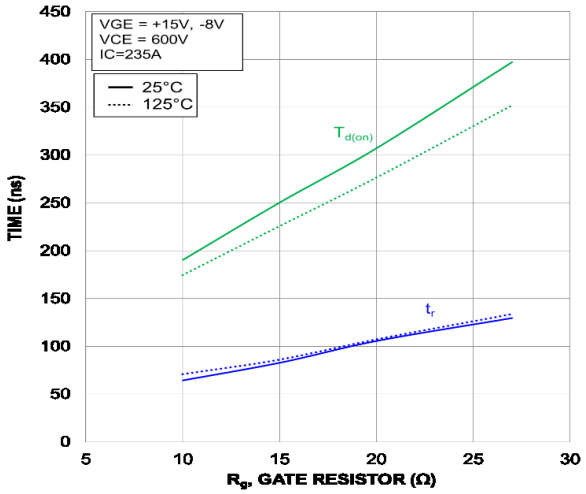


Figure 41. Typical Turn−On Switching Time vs. Rg

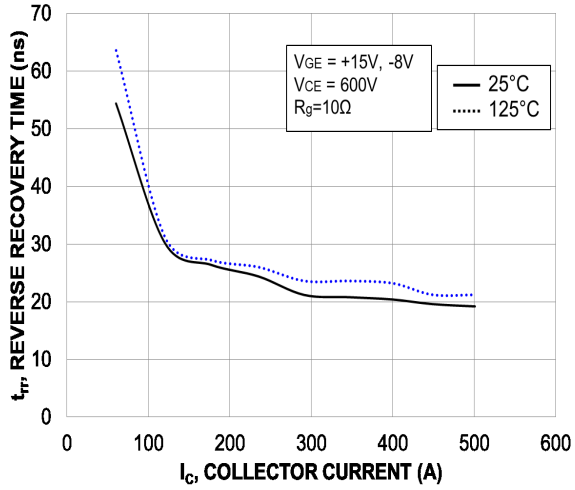


Figure 42. Typical Reverse Recovery Time vs. IC

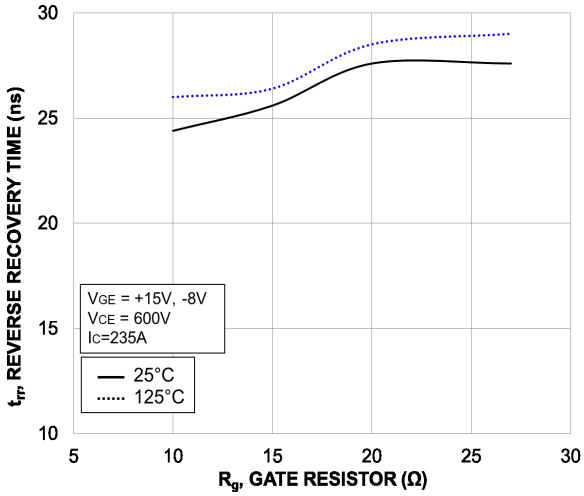


Figure 43. Typical Reverse Recovery Time vs. Rg

TYPICAL SWITCHING CHARACTERISTICS – T1, T4 IGBT COMMUTATE D5, D6 INVERSE DIODE

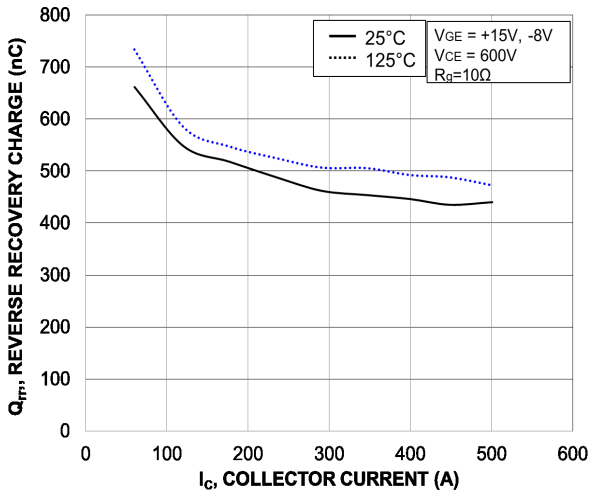


Figure 44. Typical Reverse Recovery Charge vs. IC

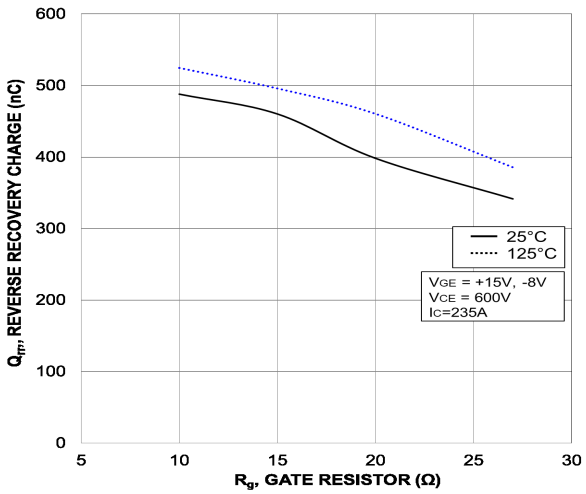


Figure 45. Typical Reverse Recovery Charge vs. Rg

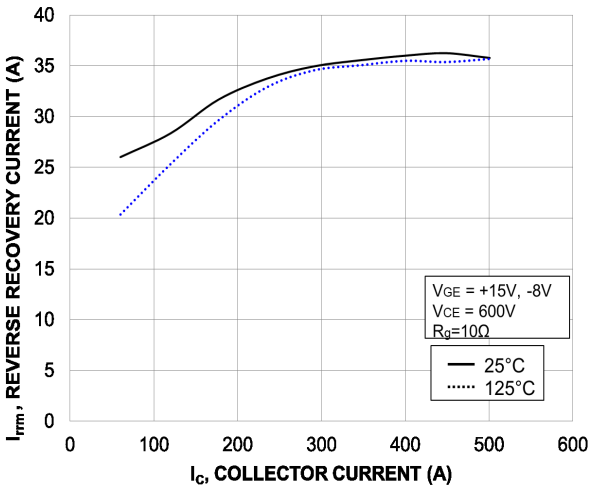


Figure 46. Typical I_{rrm} Current vs. IC

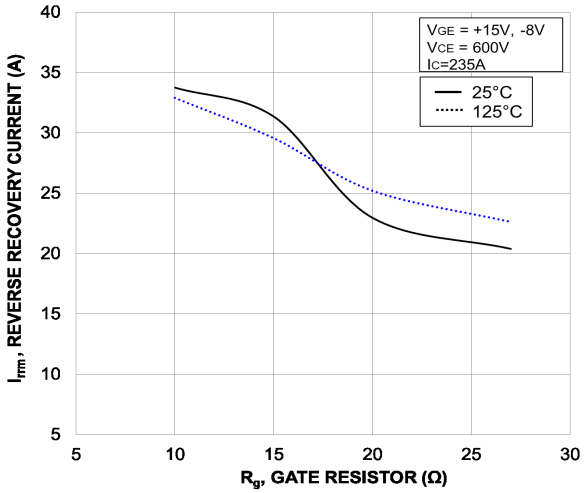


Figure 47. Typical I_{rrm} Current vs. Rg

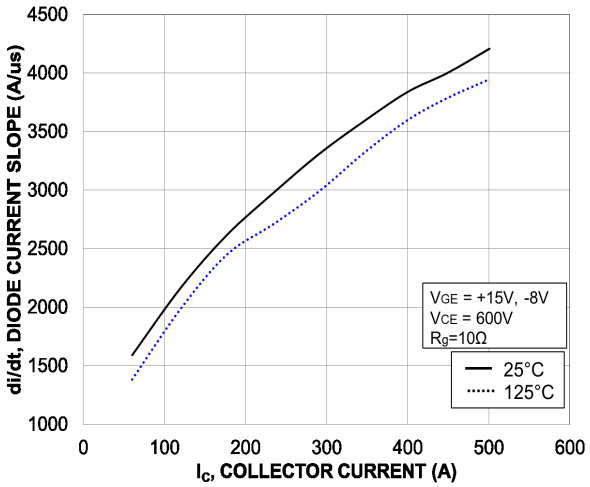


Figure 48. Typical di/dt Current Slope vs. IC

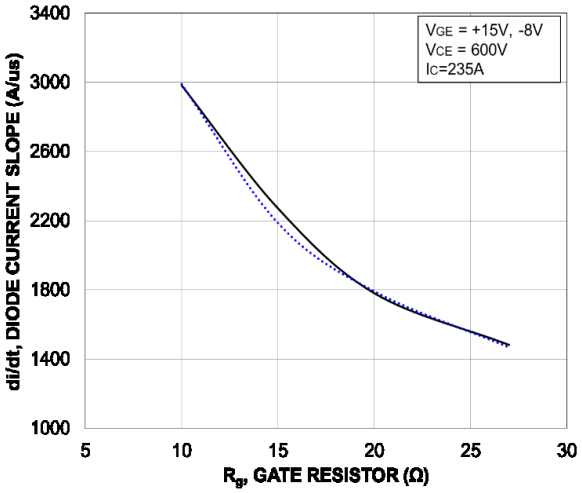


Figure 49. Typical di/dt Current Slope vs. Rg

TYPICAL SWITCHING CHARACTERISTICS – T2, T3 IGBT COMMUTATE D1, D4 INVERSE DIODE

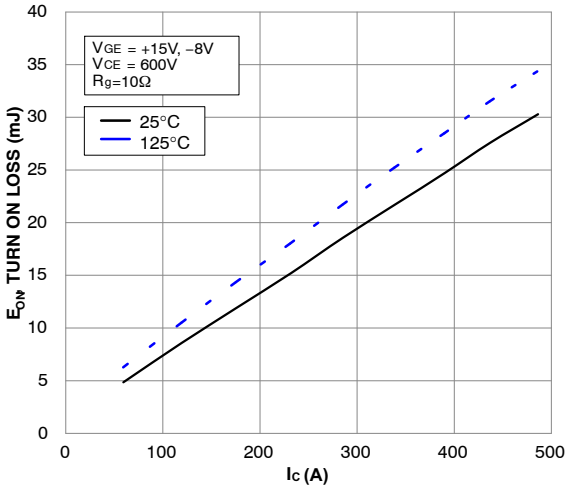


Figure 50. Typical Turn On Loss vs. IC

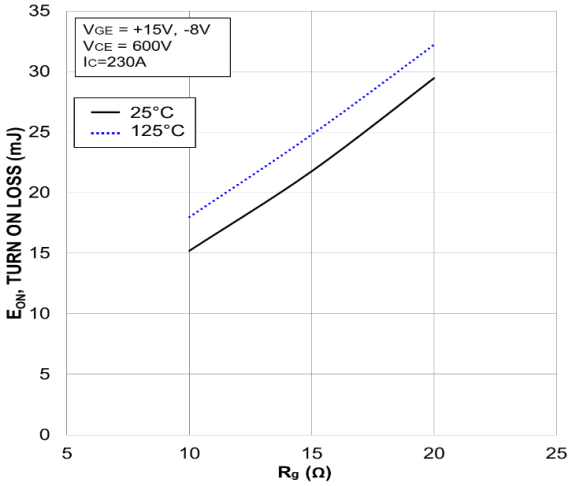


Figure 51. Typical Turn On Loss vs. Rg

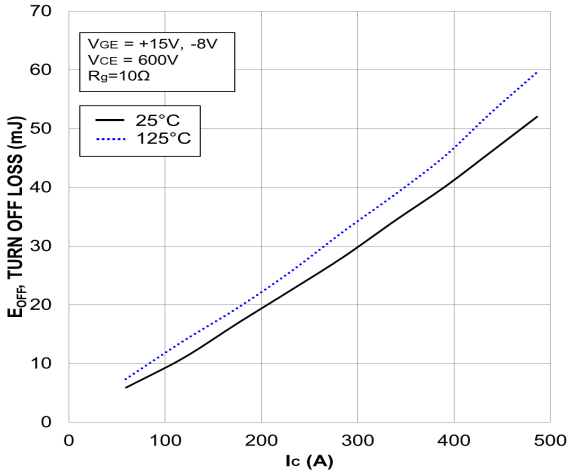


Figure 52. Typical Turn Off Loss vs. IC

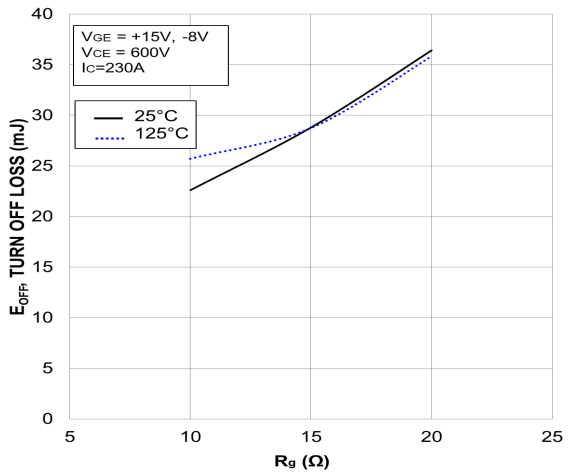


Figure 53. Typical Turn Off Loss vs. Rg

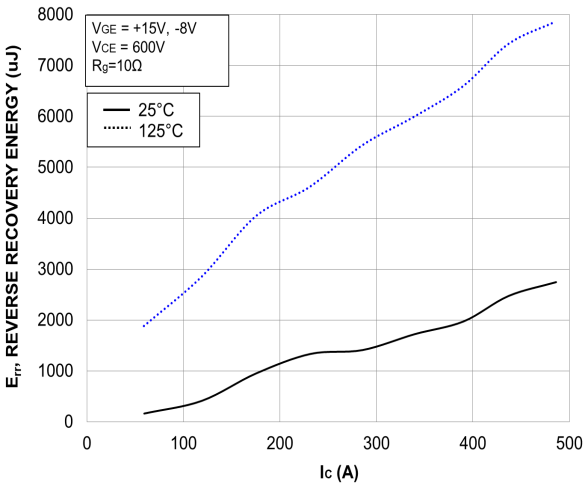


Figure 54. Typical Reverse Recovery Loss vs. IC

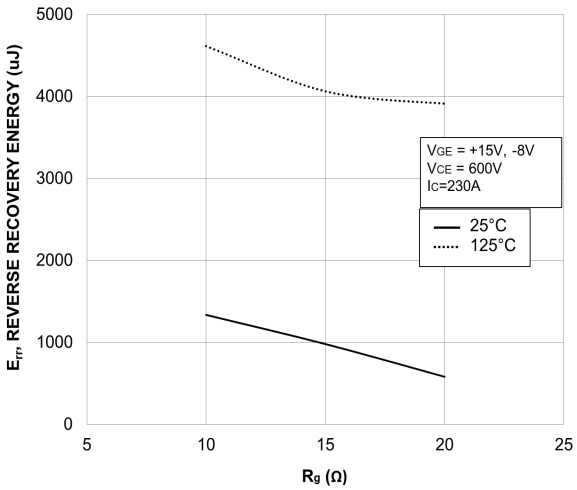


Figure 55. Typical Reverse Recovery Loss vs. Rg

TYPICAL SWITCHING CHARACTERISTICS – T2, T3 IGBT COMMUTATE D1, D4 INVERSE DIODE

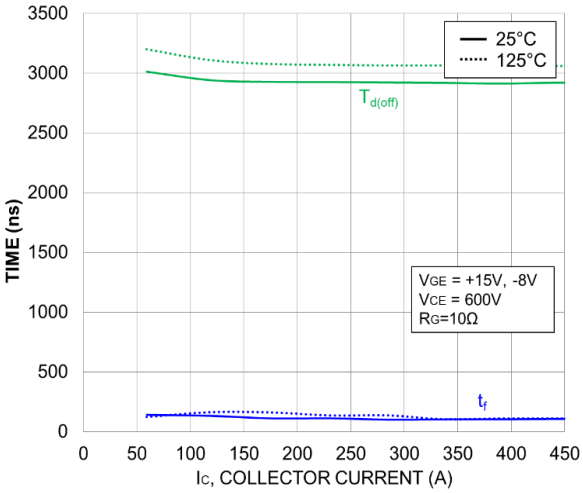


Figure 56. Typical Turn−Off Switching Time vs. IC

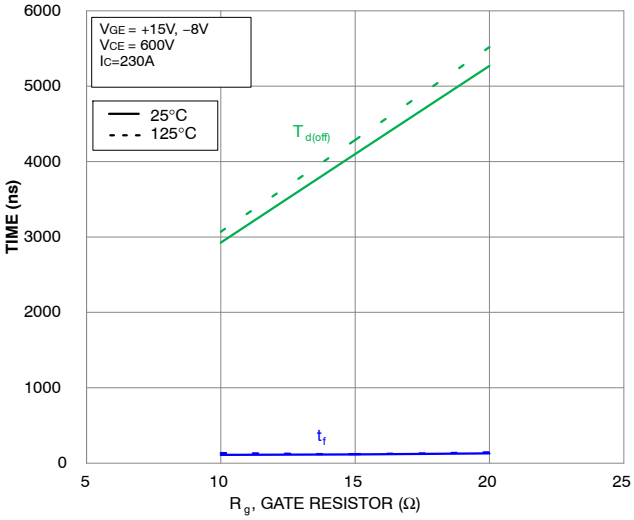


Figure 57. Typical Turn−Off Switching Time vs. Rg

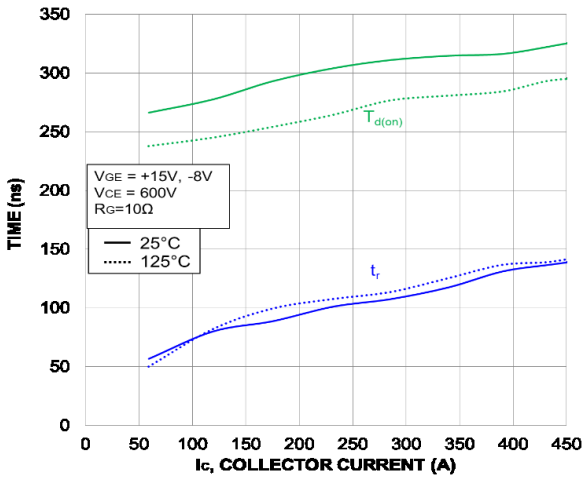


Figure 58. Typical Turn−On Switching Time vs. IC

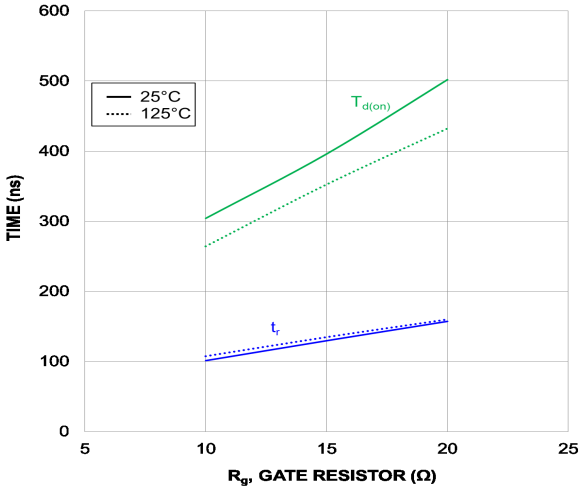


Figure 59. Typical Turn−On Switching Time vs. Rg

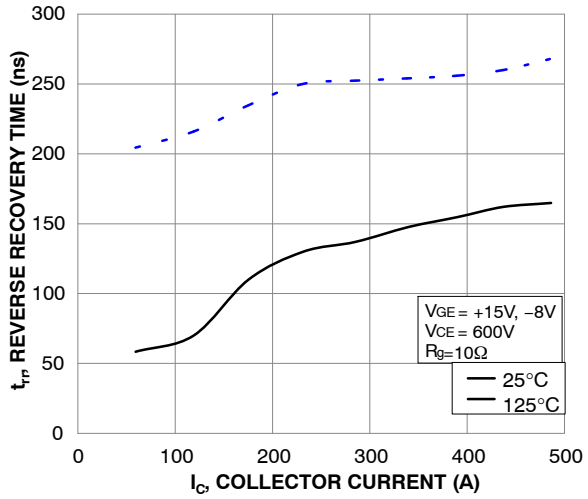


Figure 60. Typical Reverse Recovery Time vs. IC

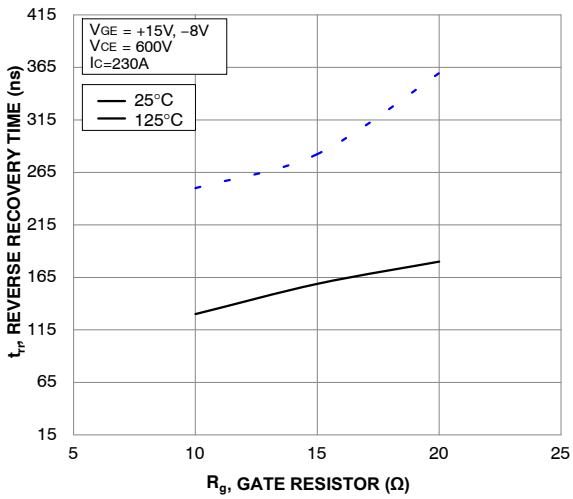


Figure 61. Typical Reverse Recovery Time vs. Rg

TYPICAL SWITCHING CHARACTERISTICS – T2, T3 IGBT COMMUTATE D1, D4 INVERSE DIODE

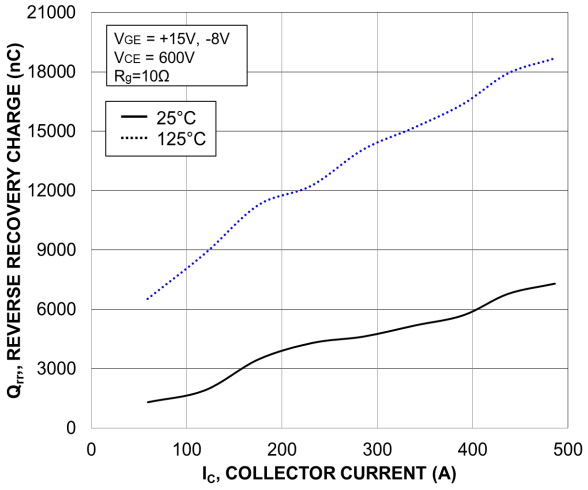


Figure 62. Typical Recovery Charge vs. IC

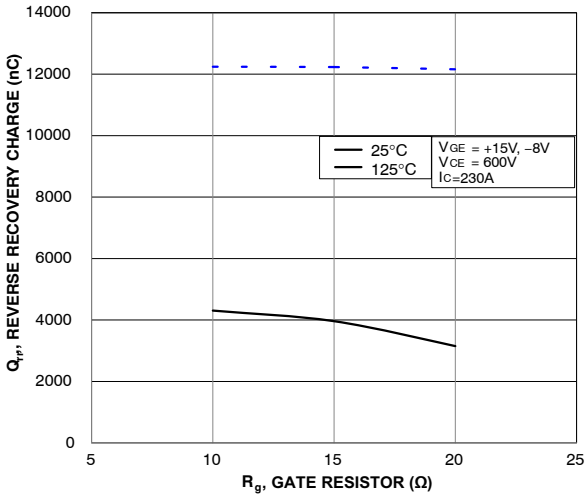


Figure 63. Typical Recovery Charge vs. Rg

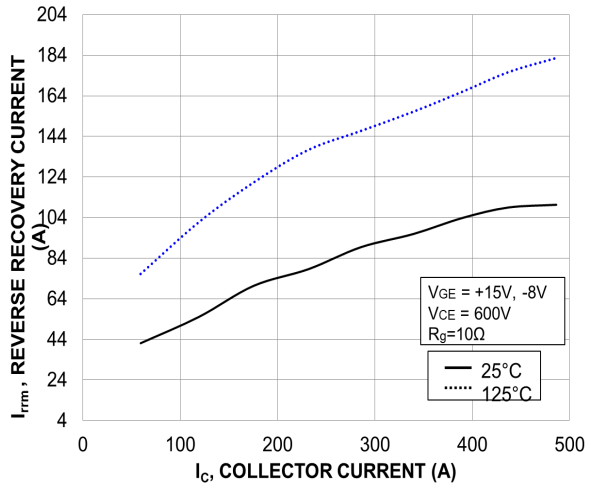


Figure 64. Typical Recovery Current vs. IC

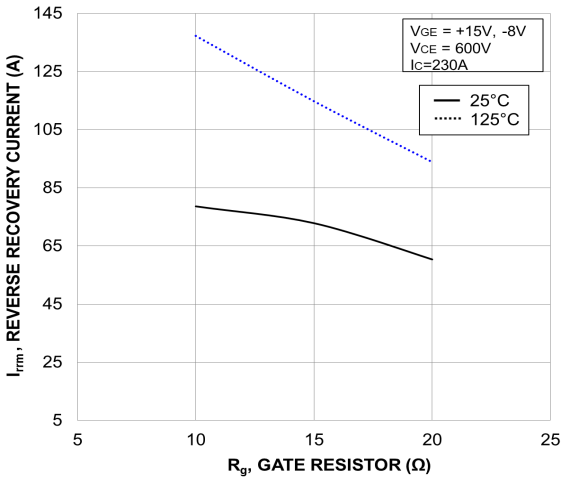


Figure 65. Typical Recovery Current vs. Rg

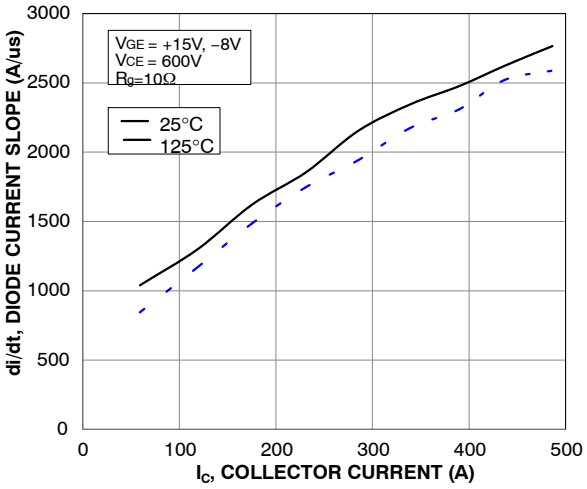


Figure 66. Typical di/dt Current Slope vs. IC

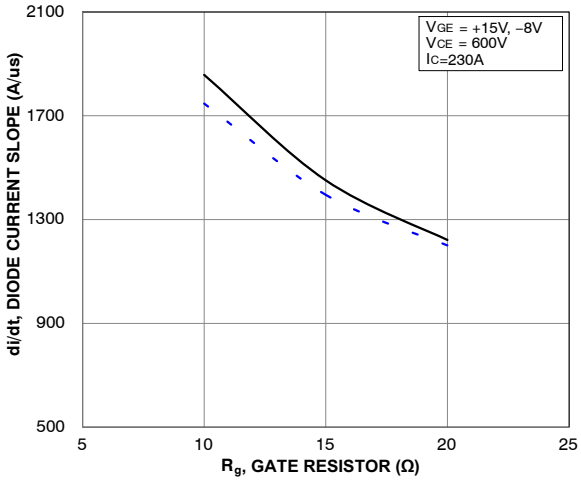


Figure 67. Typical di/dt Current Slope vs. Rg

TYPICAL SWITCHING CHARACTERISTICS – T5, T6 IGBT COMMUTATE D1, D4 INVERSE DIODE

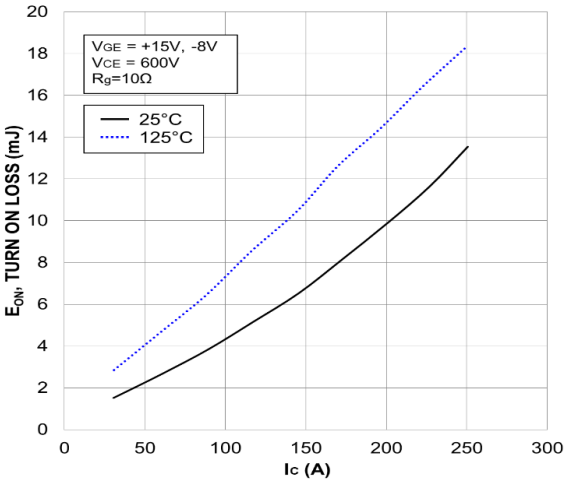


Figure 68. Typical Turn On Loss vs. IC

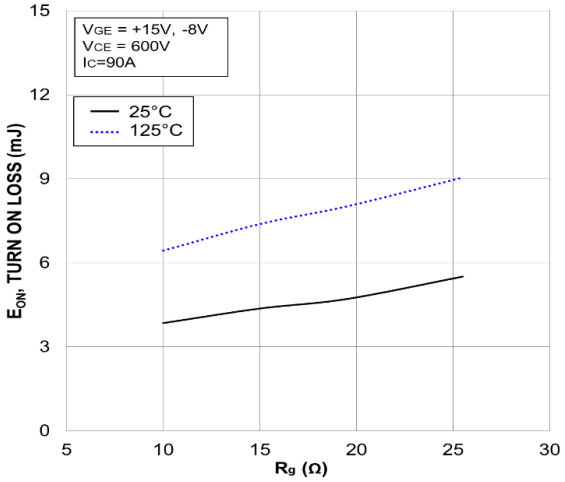


Figure 69. Typical Turn On Loss vs. Rg

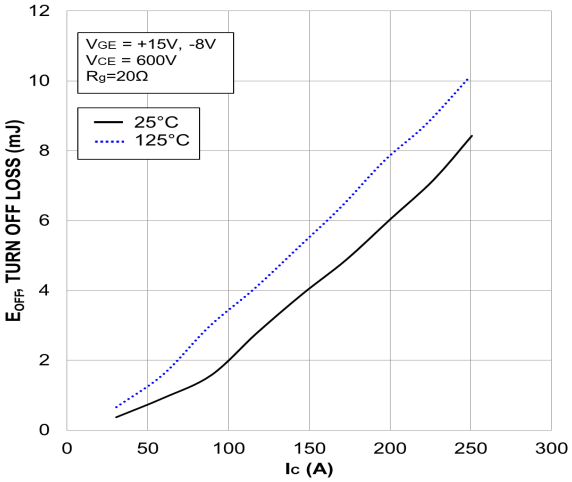


Figure 70. Typical Turn Off Loss vs. IC

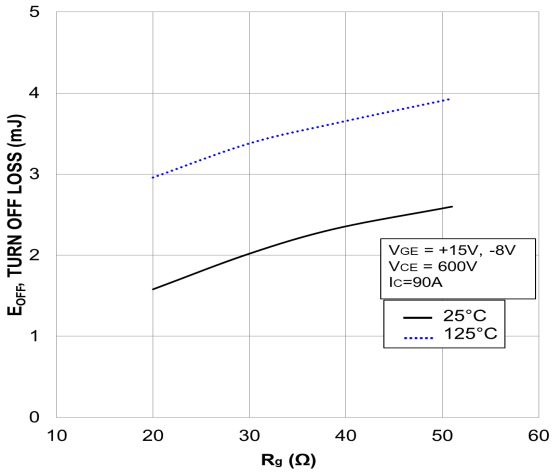


Figure 71. Typical Turn Off Loss vs. Rg

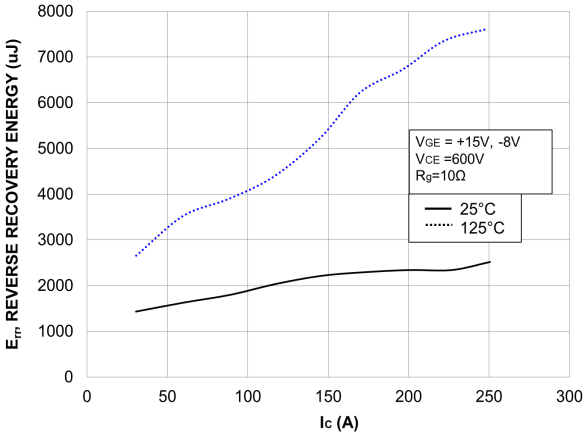


Figure 72. Typical Reverse Recovery Energy vs. IC

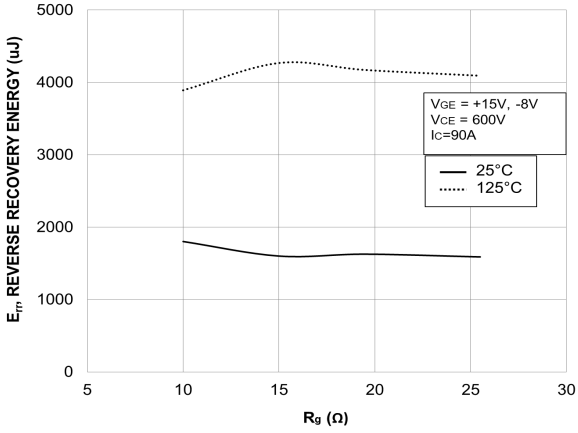


Figure 73. Typical Reverse Recovery Energy vs. Rg

TYPICAL SWITCHING CHARACTERISTICS – T5, T6 IGBT COMMUTATE D1, D4 INVERSE DIODE

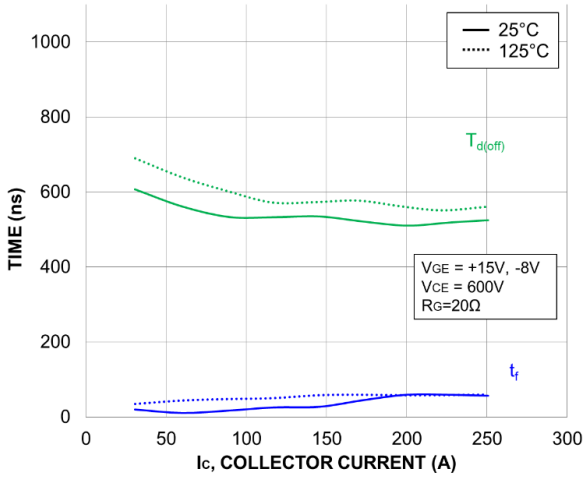


Figure 74. Typical Turn−Off Switching Time vs. IC

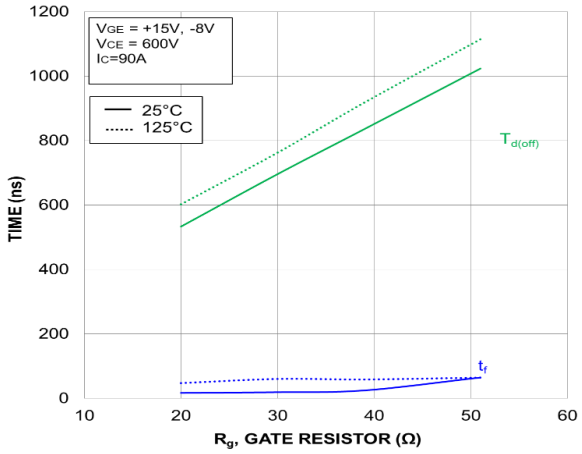


Figure 75. Typical Turn−Off Switching Time vs. Rg

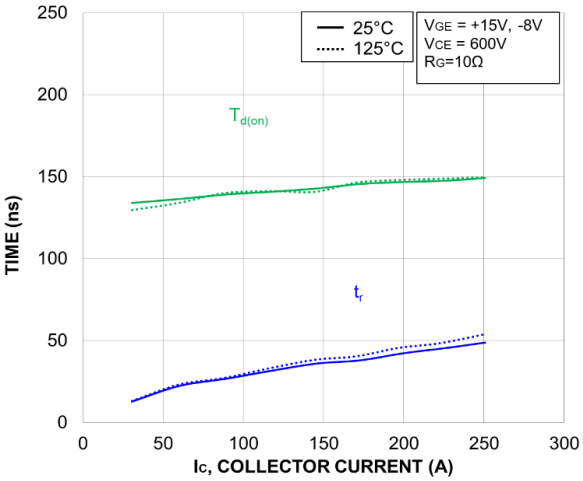


Figure 76. Typical Turn−On Switching Time vs. IC

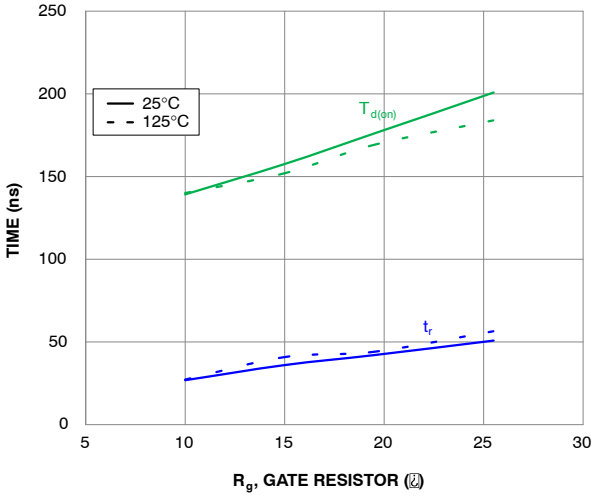


Figure 77. Typical Turn−On Switching Time vs. Rg

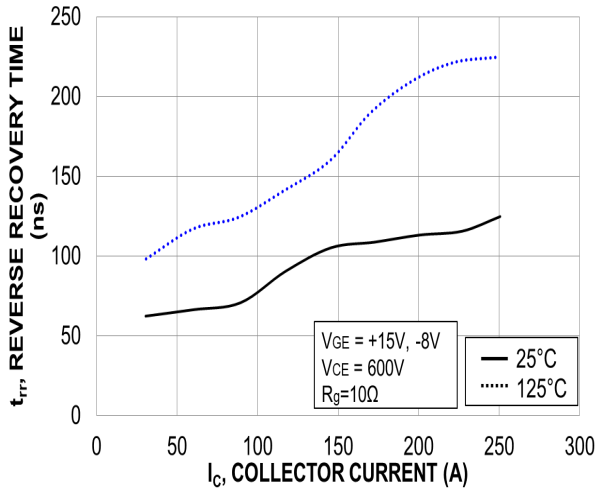


Figure 78. Typical Reverse Recovery Time vs. IC

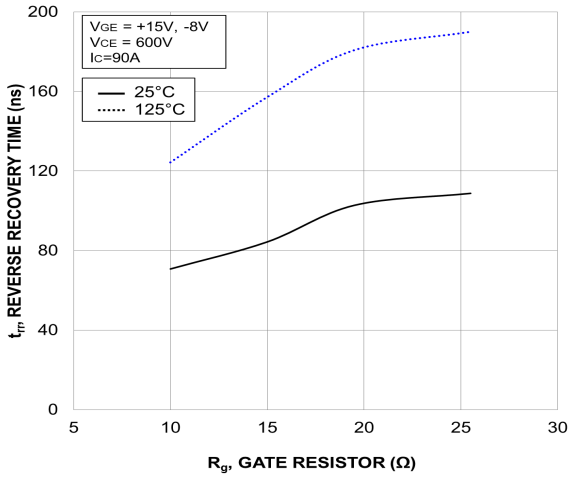


Figure 79. Typical Reverse Recovery Time vs. Rg

TYPICAL SWITCHING CHARACTERISTICS – T5, T6 IGBT COMMUTATE D1, D4 INVERSE DIODE

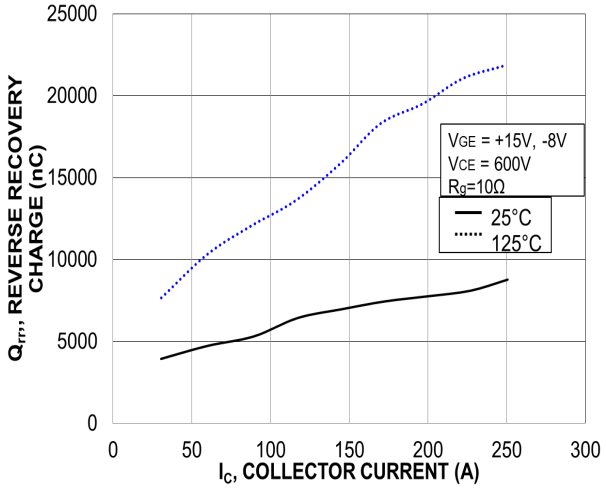


Figure 80. Typical Recovery Charge vs. IC

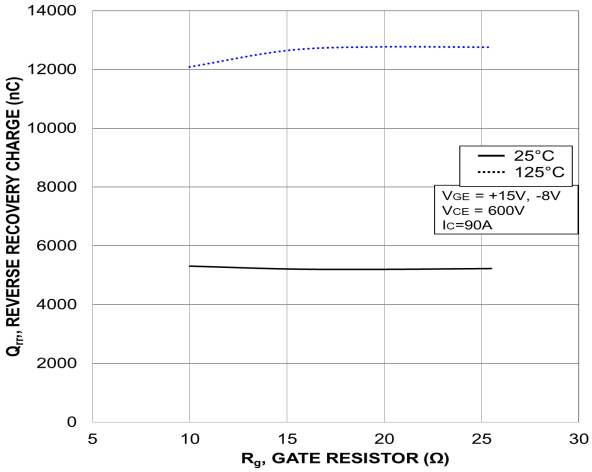


Figure 81. Typical Recovery Charge vs. Rg

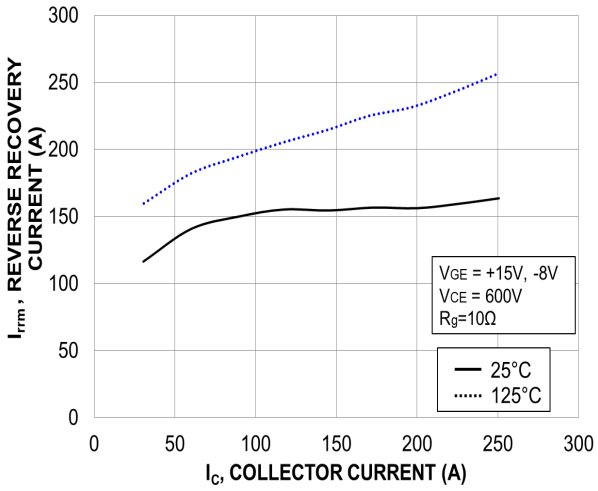


Figure 82. Typical Recovery Current vs. IC

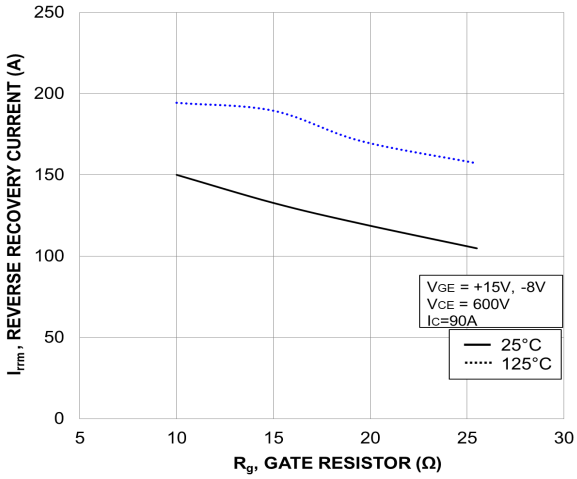


Figure 83. Typical Recovery Current vs. Rg

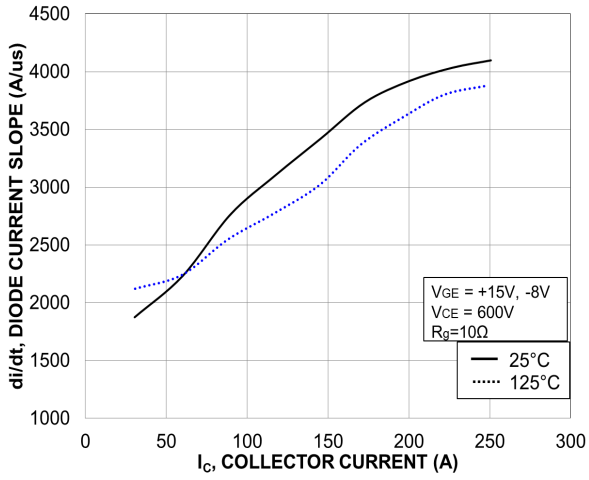


Figure 84. Typical di/dt Current Slope vs. IC

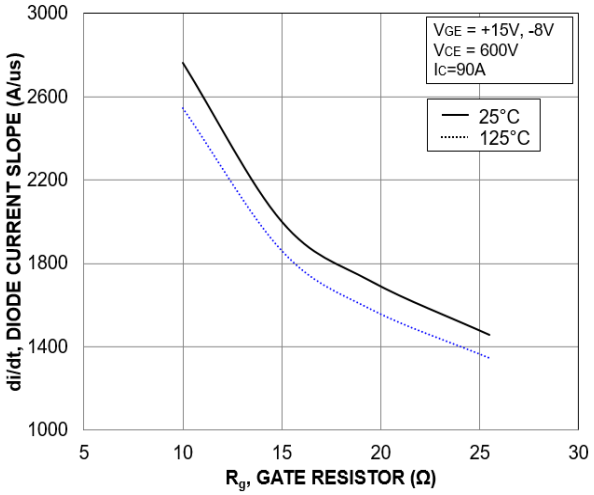
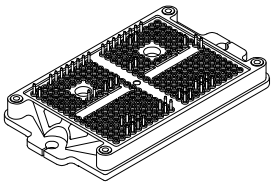
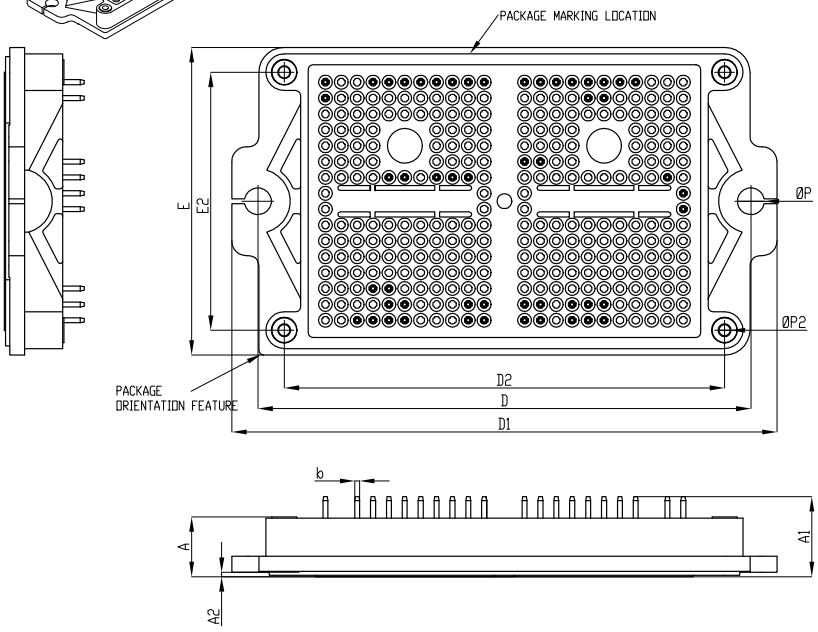


Figure 85. Typical di/dt Current Slope vs. Rg



PIM52, 99.4x62 (SOLDER PIN)
CASE 180CL
ISSUE B

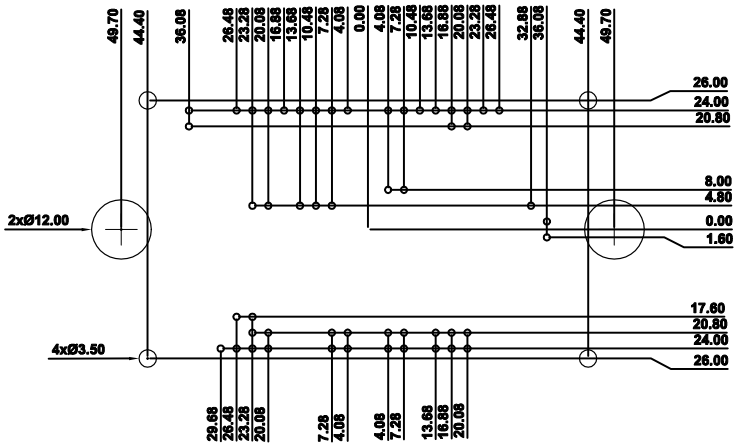
DATE 23 FEB 2021



NOTES:

1. **CONTROLLING DIMENSION : MILLIMETERS**
2. **PIN POSITION TOLERANCE IS ± 0.4mm**
3. **PACKAGE MARKING IS LOCATED AS SHOWN ON THE SIDE OPPOSITE THE PACKAGE ORIENTATION FEATURES**

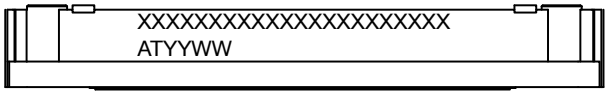
DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	11.65	12.00	12.35
A1	15.65	16.15	16.65
A2	0.60	0.85	1.10
b	0.95	1.00	1.05
D	99.15	99.4	99.65
D1	109.50	109.90	110.30
D2	88.60	88.80	89.0
E	61.60	62.00	62.40
E2	51.80	52.00	52.20
P	5.25	5.40	5.55
P2	2.20	2.30	2.40



RECOMMENDED MOUNTING PATTERN

* For additional Information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

GENERIC MARKING DIAGRAM*



XXXXX = Specific Device Code
AT = Assembly & Test Site Code
YYWW = Year and Work Week Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “ ▪”, may or may not be present. Some products may not follow the Generic Marking.

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