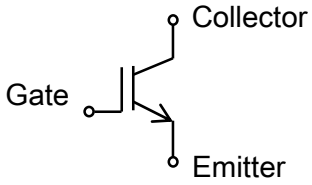
GSA100AA60



Same package as the product in this photo.

V_{CES} = 600V
I_C = 100A



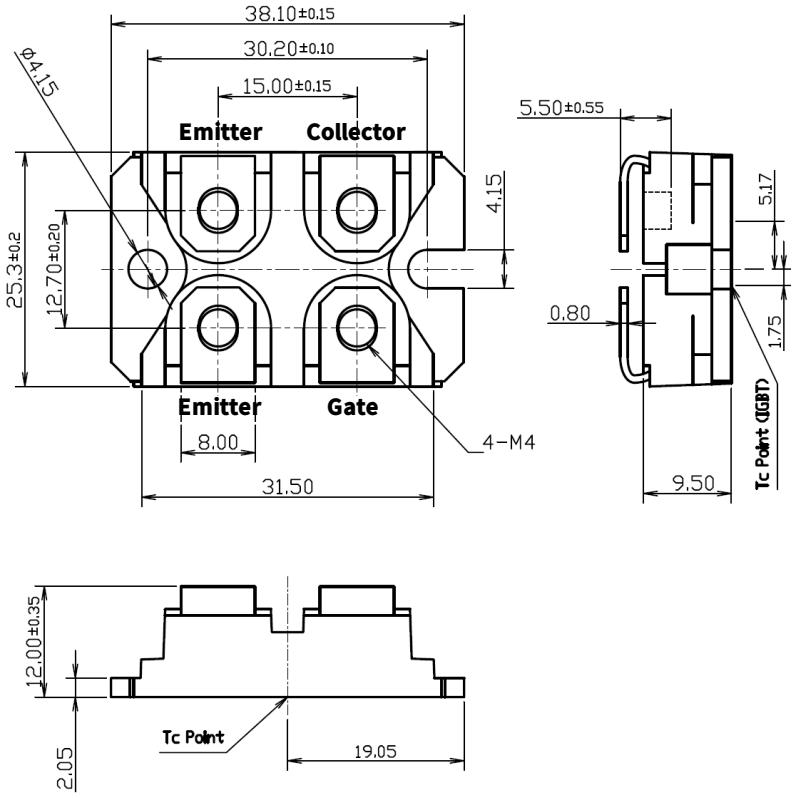
■ IGBT

Advantages

- Low Vce(sat) 1.21V Typ 125℃
- Compatible package with SOT-227
- Can be small equipment thanks to small package
- Fully isolated package V_{ISO}=2500V
- EU RoHS compliant
- UL approved File No.E76102

Applications

- AC/DC TIG Welder, AC Switch for UPS, Pulse Reverse Rectifier



GSA100AA60



Same package as the product in this photo.

V_{CES} = 600V
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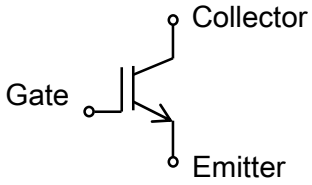


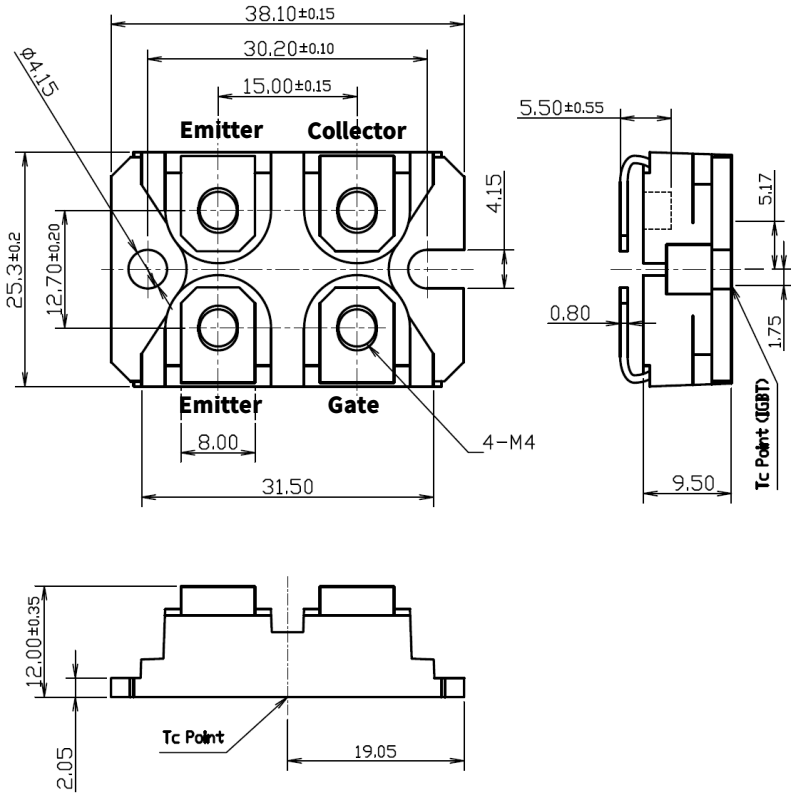
■ IGBT

Advantages

- 低 Vce(sat) 1.21V　Typ 125℃
- SOT-227 標準パッケージ
- 装置の小型化に貢献
- 絶縁耐圧V_{ISO}=2500V
- EU RoHS 対応
- UL approved File No.E76102

Applications

- AC/DC TIG溶接機, UPS等のバイパスACスイッチ，表面処理用正逆反転パルス電源



■ Maximum Ratings (T_j=25℃ unless otherwise specified)

Item	Symbol	Unit	Ratings	Conditions
Collector - Emitter Voltage	V_{CES}	V	600	V_{GE} = 0 V
Gate - Emitter Voltage	V_{GES}	V	±20	V_{CE} = 0 V
Collector Current	I_C	A	100	V_{GE} = 15 V, D.C., T_C = 113 ℃
Total Power Dissipation	P_T	W	500	T_C = 25 ℃
Junction Temperature	T_j	℃	-40～+150	
Storage Temperature	T_{stg}	℃	-40～+125	
Isolation Voltage	V_{ISO}	V	2500	A.C., RMS, 1 minute

■ Electrical Characteristics (T_j=25℃ unless otherwise specified)

Item	Symbol	Unit	Ratings			Conditions
			Min.	Typ.	Max.	
Gate - Emitter Leakage Current	I_{GES}	μA			10	V_{GE} = ±20 V, V_{CE} = 0 V
Collector - Emitter Leakage Current	I_{CES}	μA			100	V_{CE} = 600 V, V_{GE} = 0 V
					1000	V_{CE} = 600 V, V_{GE} = 0 V, T_j = 125 ℃
Collector - Emitter Breakdown Voltage	$V_{(BR)CES}$	V	600			V_{GE} = 0 V, I_C = 100 μA
Gate - Emitter Threshold Voltage	$V_{GE(th)}$	V	5.3	6.0	6.7	V_{CE} = 10V, I_C = 10 mA
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	V		1.25	1.50	I_C = 100 A, V_{GE} = 15 V
				1.21		I_C = 100 A, V_{GE} = 15 V, T_j = 125 ℃
Input Capacitance	C_{ies}	nF		6.69		V_{CE} = 10 V, V_{GE} = 0 V, f = 1 MHz
Output Capacitance	C_{oes}	nF		0.90		
Reverse Transfer Capacitance	C_{res}	nF		0.23		

■ Switching Characteristics (T_j=25℃ unless otherwise specified)

Item	Symbol	Unit	Ratings			Conditions
			Min.	Typ.	Max.	
Total Gate Charge	Q_g	nC		224		I_C = 100 A, V_{GE}/-V_{GE} = +15/0 V V_{CE} = 300 V
Gate - Emitter Charge	Q_{ge}	nC		53		
Gate - Collector Charge	Q_{gc}	nC		91		
Turn - On Switching Loss	E_{on}	mJ		12.5		I_C = 100 A, V_{GE}/-V_{GE} = +15/0 V V_{CE} = 300 V, R_G = 330 Ω *1
Turn - Off Switching Loss	E_{off}	mJ		31.0		
Total Switching Loss	E_{tot}	mJ		43.5		
Turn - On Delay Time	$t_{d(on)}$	ns		880		
Rise Time	t_r	ns		380		
Turn - Off Delay Time	$t_{d(off)}$	ns		7800		
Fall Time	t_f	ns		980		
Turn - On Switching Loss	E_{on}	mJ		14.0		I_C = 100 A, V_{GE}/-V_{GE} = +15/0 V V_{CE} = 300 V, R_G = 330 Ω, T_j = 125 ℃ *1
Turn - Off Switching Loss	E_{off}	mJ		48.5		
Total Switching Loss	E_{tot}	mJ		62.5		
Turn - On Delay Time	$t_{d(on)}$	ns		820		
Rise Time	t_r	ns		400		
Turn - Off Delay Time	$t_{d(off)}$	ns		8800		
Fall Time	t_f	ns		1600		

*1 : Please refer Fig.1 in page 5 about test circuit.

■ Thermal Characteristics (T_j=25℃ unless otherwise specified)

Item	Symbol	Unit	Ratings			Conditions
			Min.	Typ.	Max.	
Junction-to-Case Thermal Resistance	$R_{th(j-c)}$	℃/W			0.25	
Case-to-Heat sink Thermal Resistance	$R_{th(c-f)}$	℃/W		0.10	0.20	Per module Thermal conductivity = 9×10^{-3} W/cm·℃

■ Mechanical Characteristics (T_j=25℃ unless otherwise specified)

Item		Symbol	Unit	Ratings			Conditions
				Min.	Typ.	Max.	
Weight		-	g		30		Typical value
Mounting Torque	Mounting M4	-	N·m		1.5		Recommended value : 1.0～1.4
	Terminals M4				1.5		Recommended value : 1.0～1.4

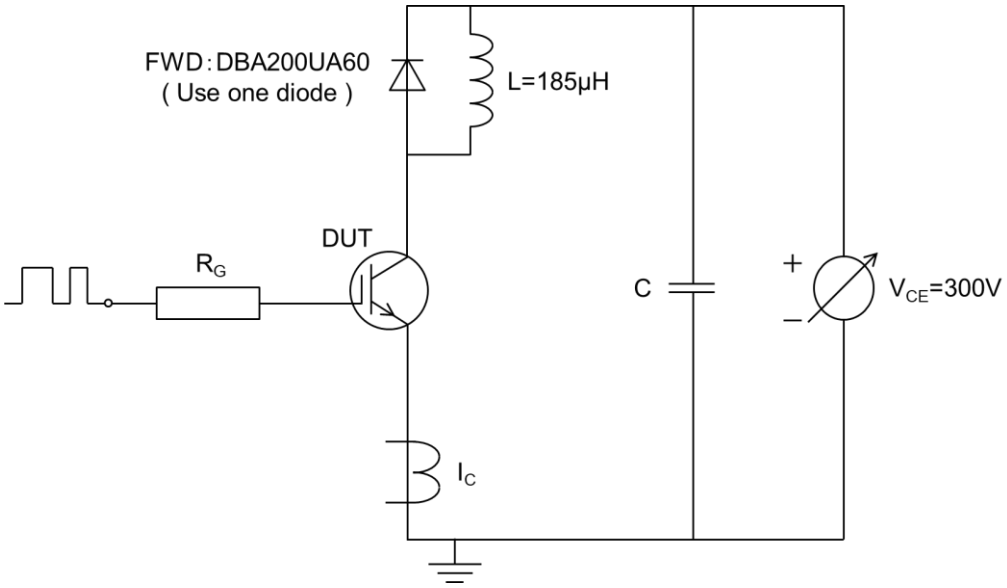


Fig.1 Inductive load switching time test circuit

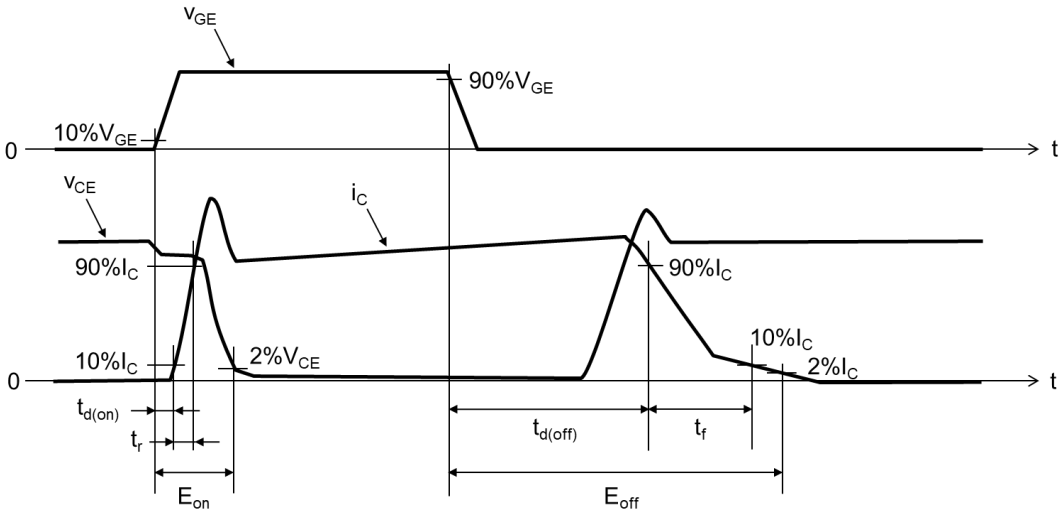
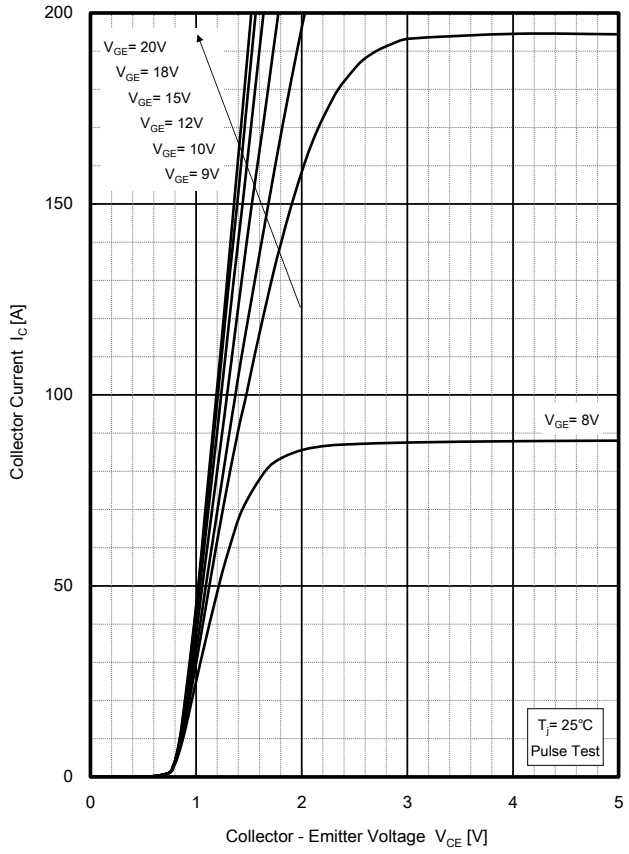
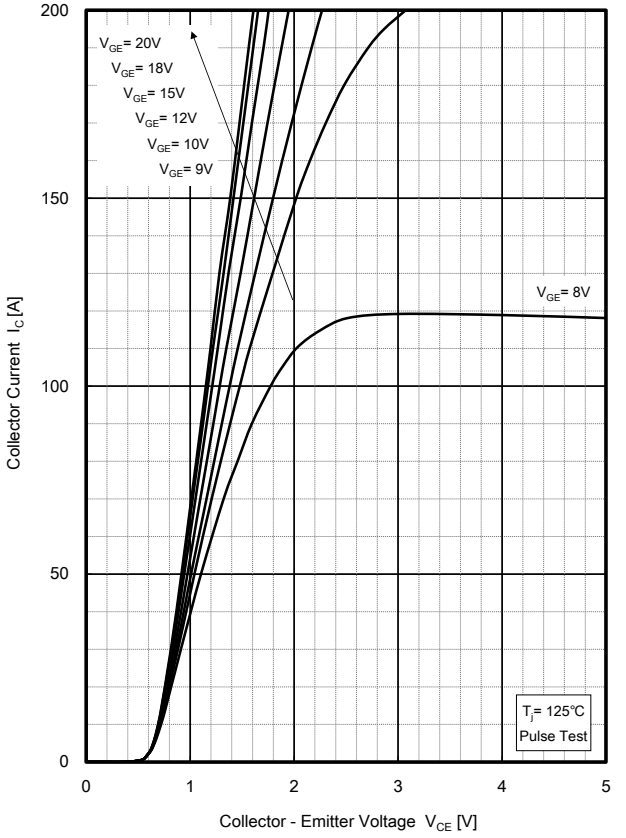


Fig.2 Switching waveform at the time of Inductive load

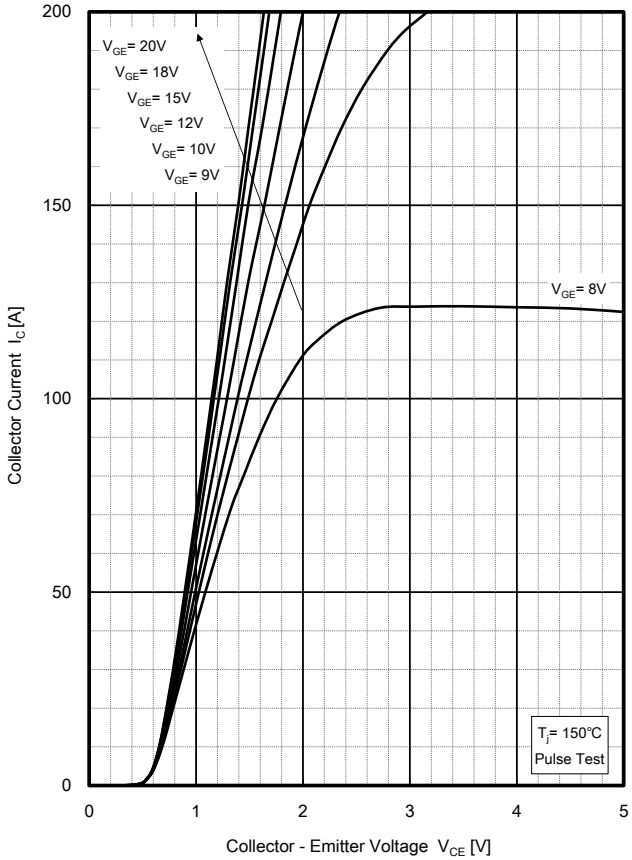
Output Characteristics (Typ.)



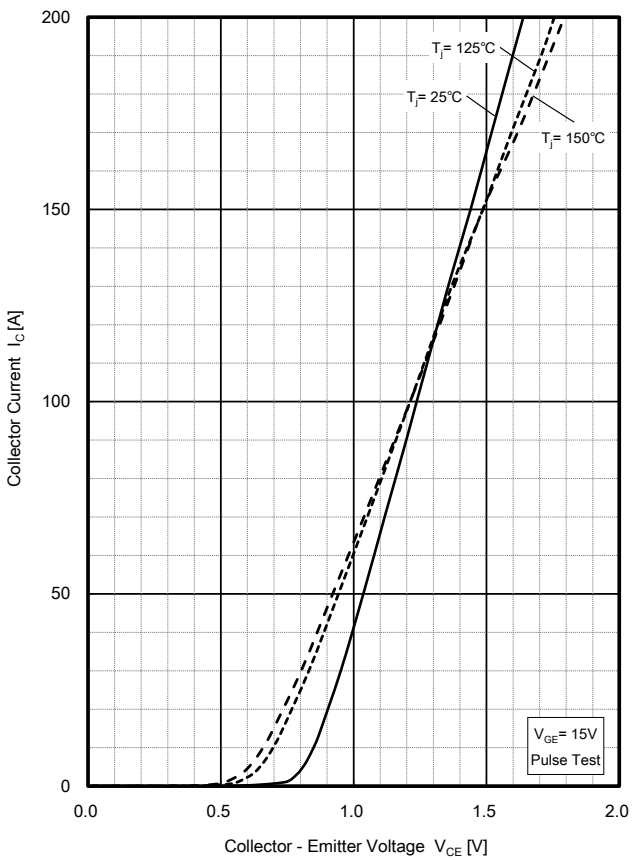
Output Characteristics (Typ.)



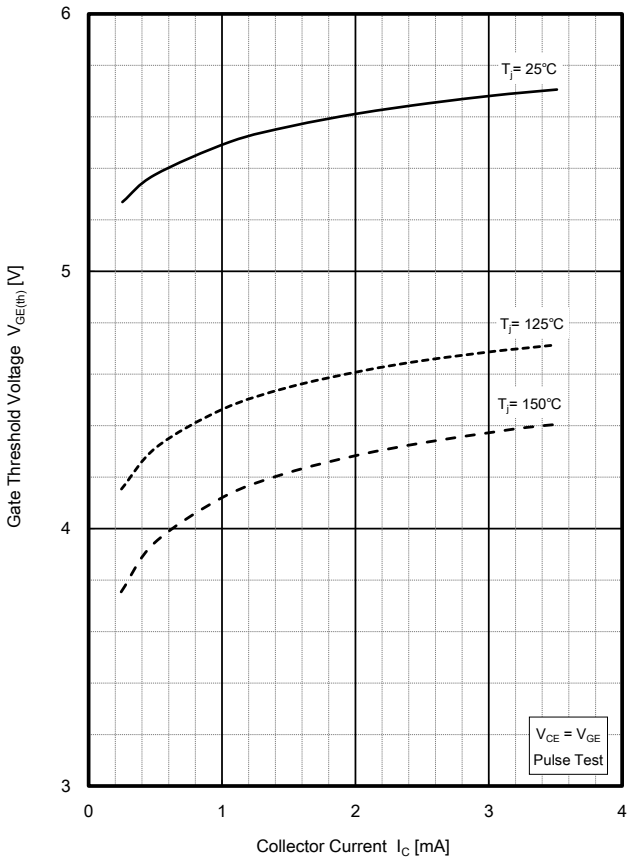
Output Characteristics (Typ.)



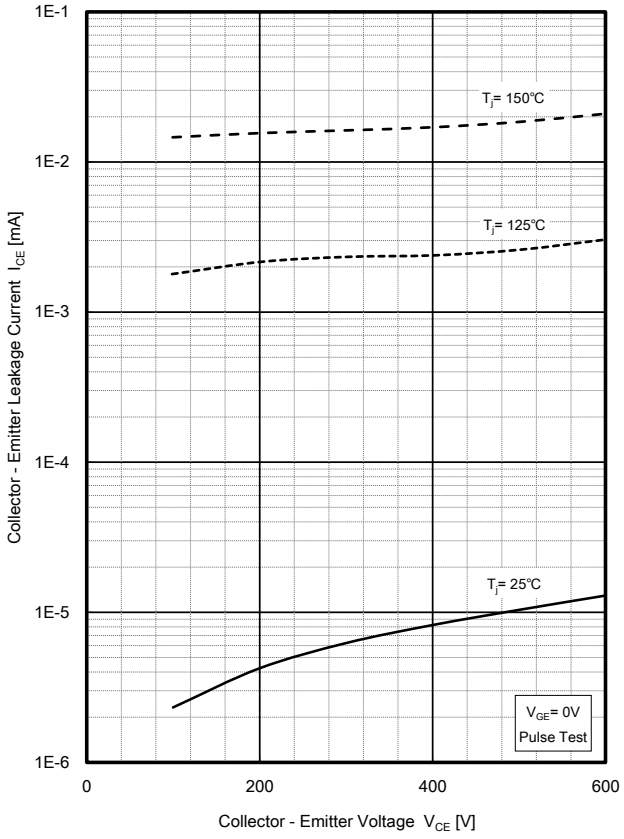
Output Characteristics (Typ.)



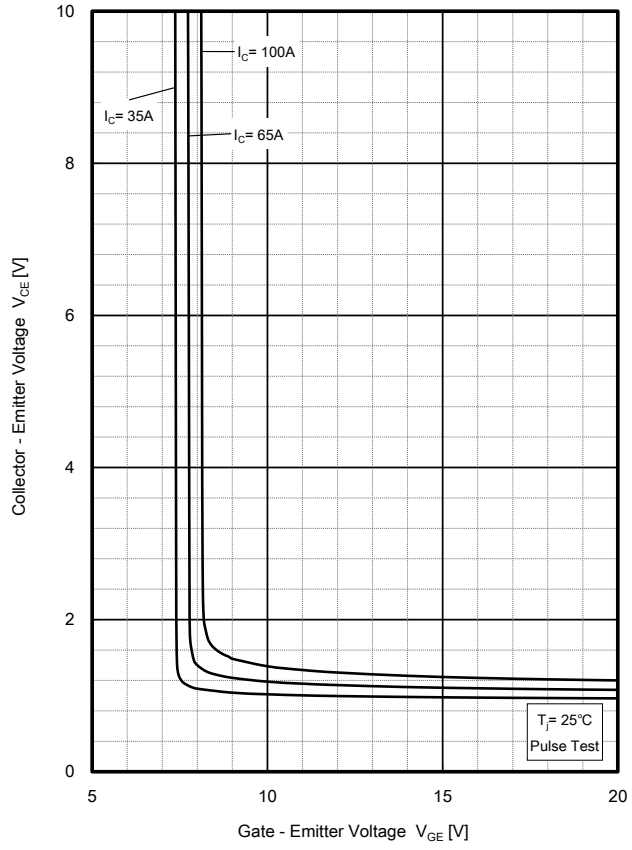
Gate Threshold Voltage Characteristics (Typ.)



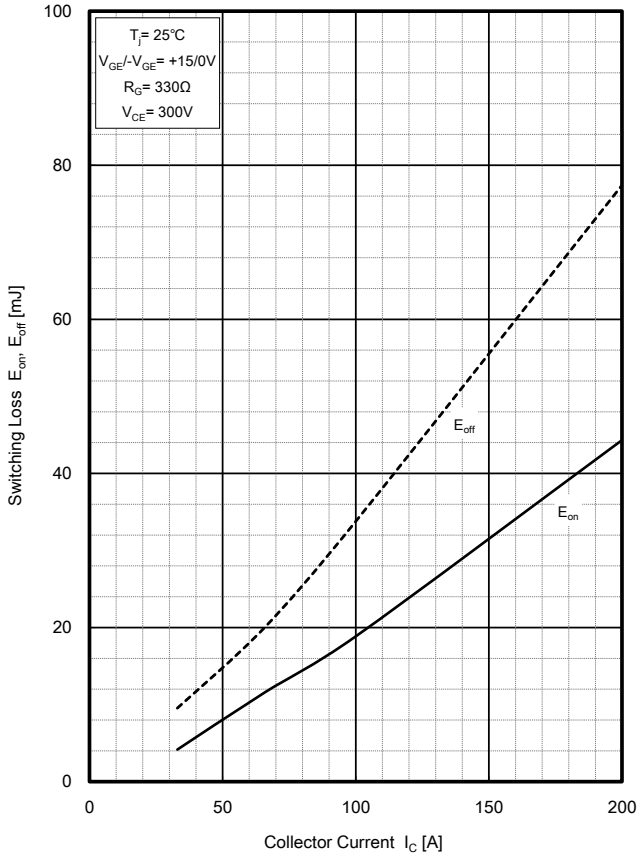
Collector - Emitter Leakage Current Characteristics (Typ.)



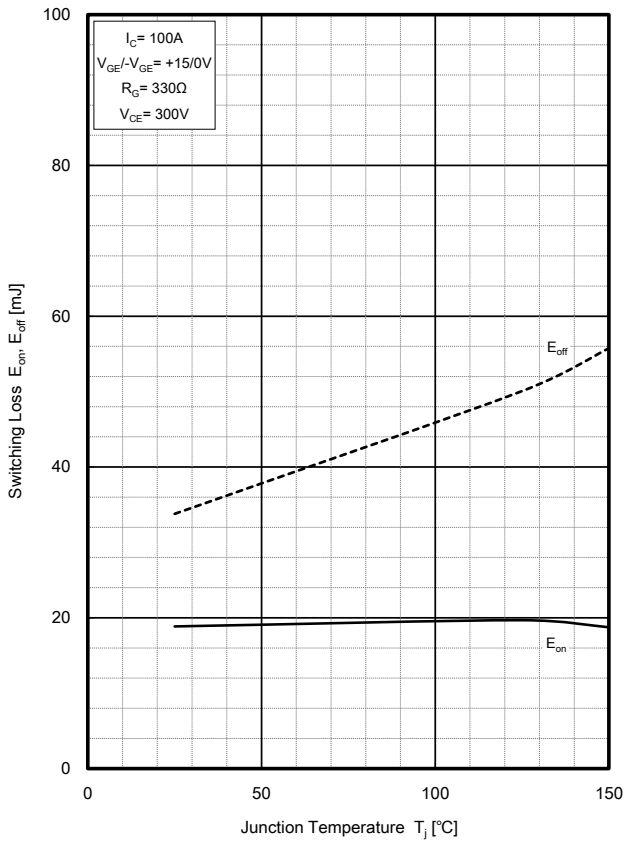
Collector - Emitter Saturation Voltage Characteristics (Typ.)



Switching Characteristics (Typ.)



Switching Characteristics (Typ.)



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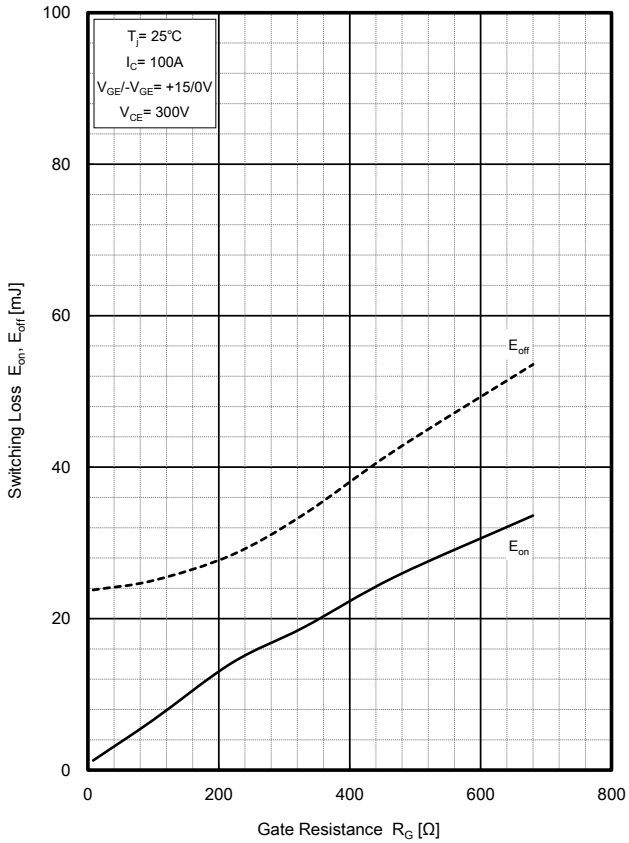

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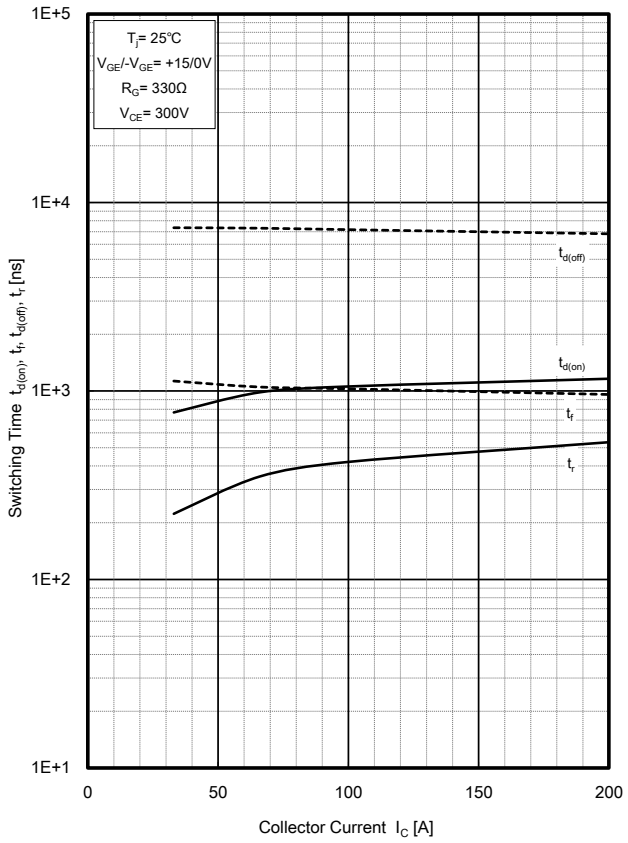

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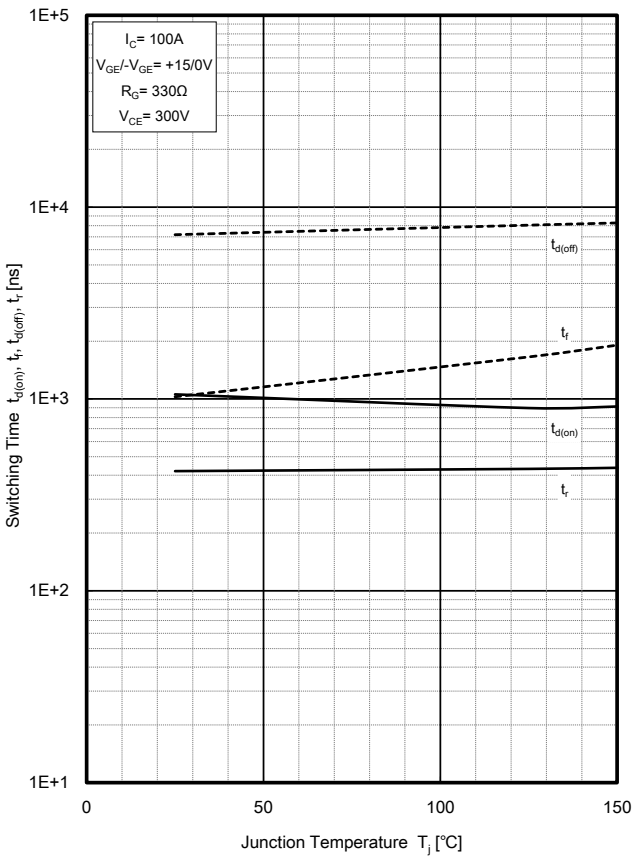
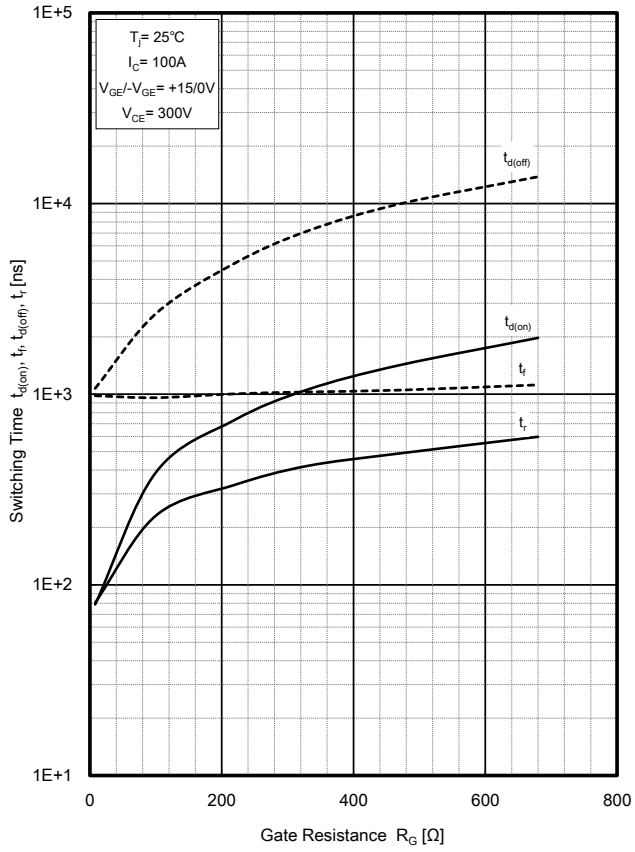
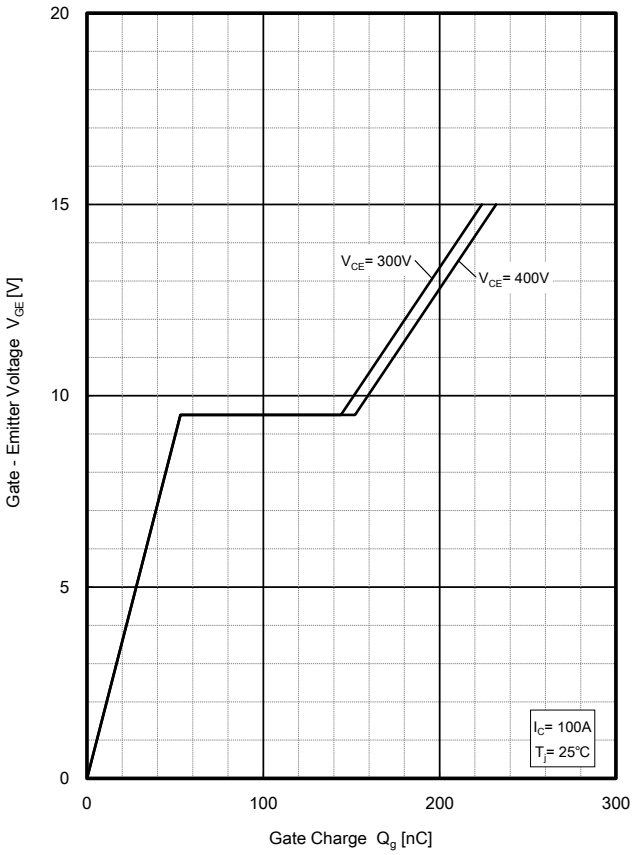


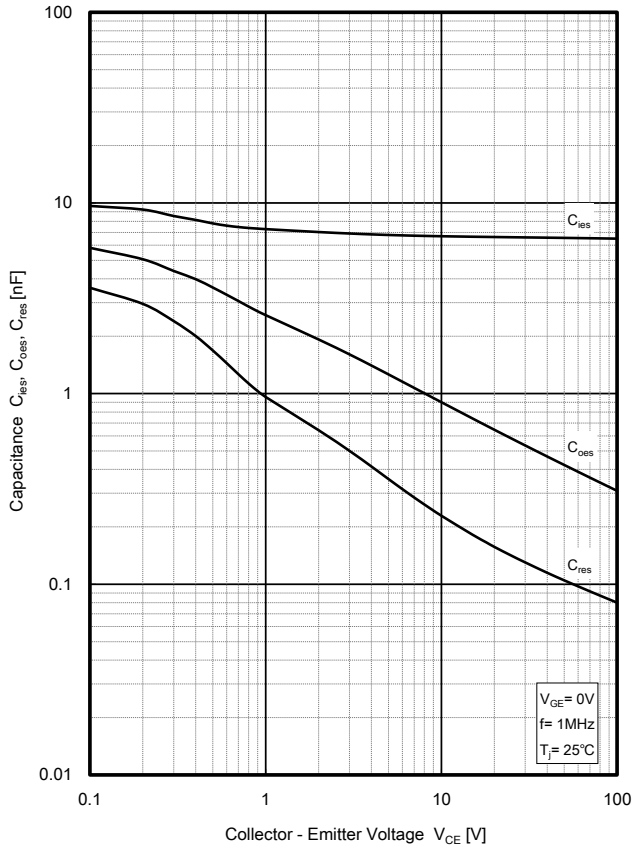
Switching Characteristics (Typ.)



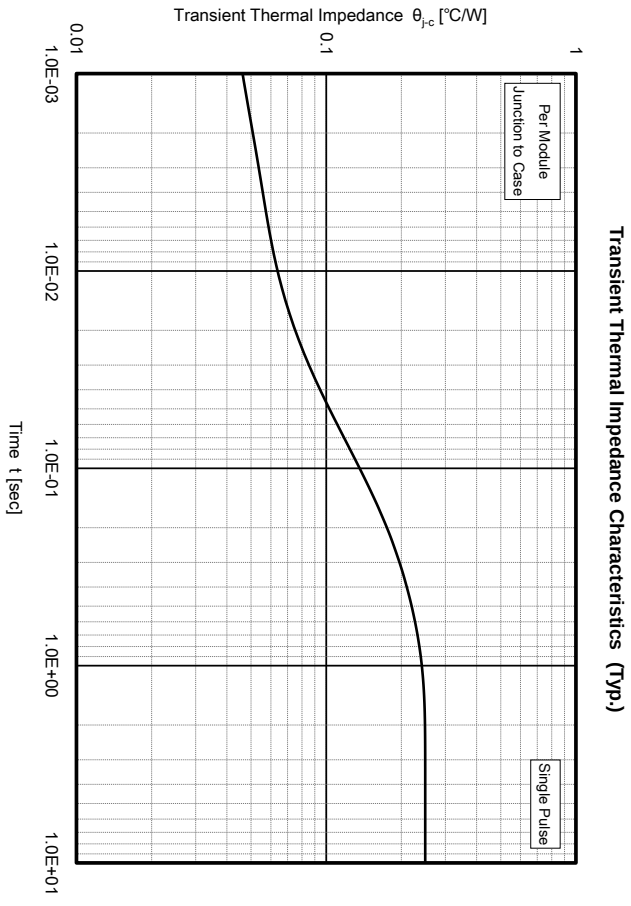
Gate Charge Characteristics (Typ.)



Capacitance Characteristics (Typ.)



Transient Thermal Impedance Characteristics (Typ.)



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