UMW BSS84

-60V P-Channel MOSFET

1.Description

This P-channel enhancement-mode field-effect transistor is produced using ON Semiconductor's proprietary, high cell density, DMOS technology. This very high density process minimizes on-state resistance and to provide rugged and reliable performance and fast switching. The BSS84 can be used, with a minimum of effort, in most applications requiring up to 0.13 ADC.

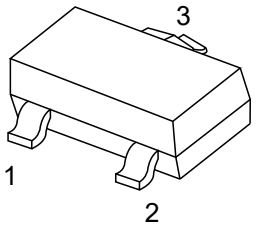
2.Features

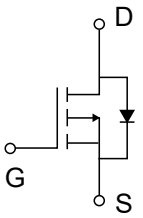
- $V_{DS(V)}$=-60V
- I_D=-0.13A
- $R_{DS(ON)}$≤6Ω(V_{GS}=-5V)

3.Pinning information

Pin	Symbol	Description
1	G	GATE
2	S	SOURCE
3	D	DRAIN

SOT-23





4.Maximum ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current – Continuous	I_D	-130	mA
– Pulsed		-520	
Total Power Dissipation *	P_D	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Operating and Storage Temperature Range	T_J,T_{STG}	-55 to 150	°C

* Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch;

5.T_A=25°C unless otherwise specified

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-50V,V_{GS}=0V,T_J=25°C			-15	μA
		V_{DS}=-50V,V_{GS}=0V,T_J=125°C			-60	
Gate-Body leakage current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-1mA	-0.8		-2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-5V, I_D=-100mA		6	10	Ω
Forward Transconductance	g_{FS}	V_{DS}=-25V, I_D=-0.1A	0.05			S
Input Capacitance	C_{iss}	V_{DS}=-25V, V_{GS}=0V, f=1MHz			45	pF
Output Capacitance	C_{oss}				25	pF
Reverse Transfer Capacitance	C_{rss}				12	pF
Turn-On Delay Time	$t_{D(on)}$	V_{DD}=-30V, I_D=-0.13A		10		ns
Turn-Off Delay Time	$t_{D(off)}$	R_{GEN}=50Ω, V_{GS}=-10V		18		ns

6.1Typical Characterisitics

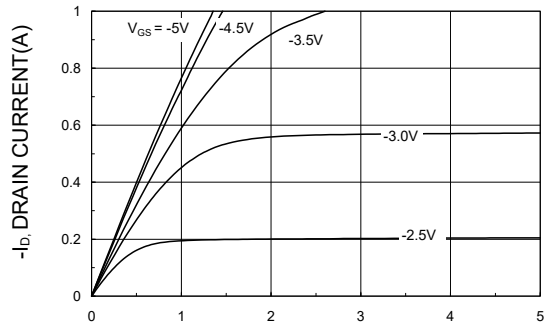


Figure 1: On-Region Characteristics.

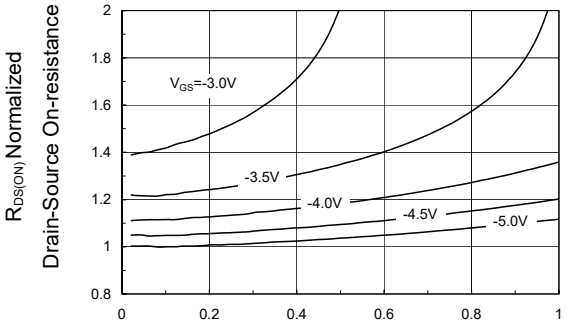


Figure 2: On-Resistance Variation with Drain Current and Gate Voltage.

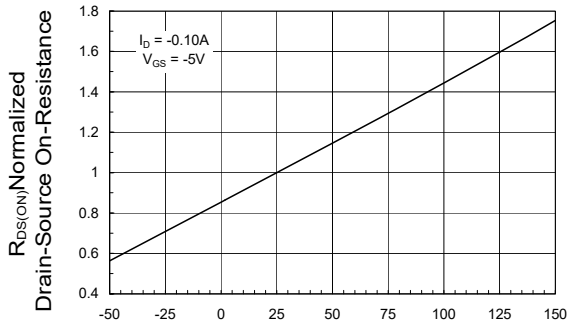


Figure 3: On-Resistance Variation with Temperature.

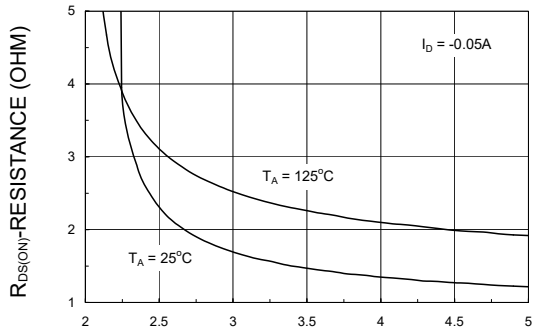


Figure 4: On-Resistance Variation with Gate-to-Source Voltage.

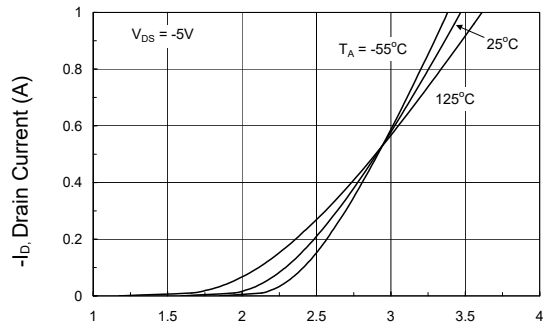


Figure 5: Transfer Characteristics.

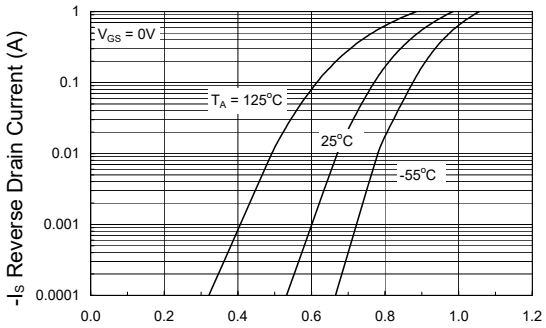
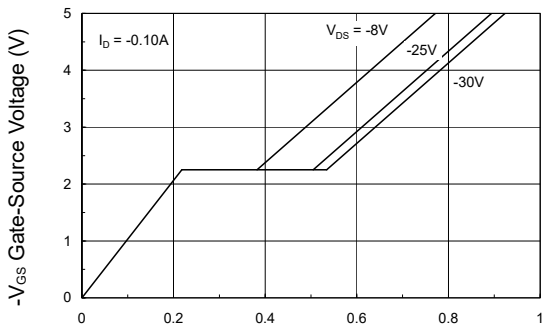


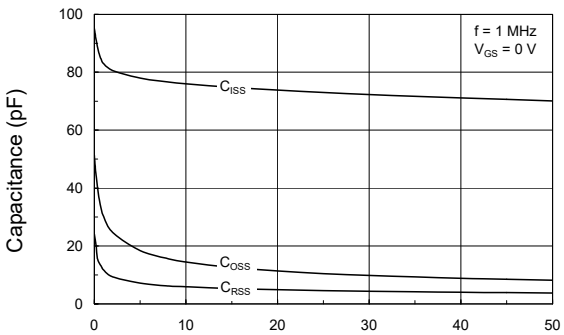
Figure 6: . Body Diode Forward Voltage Variation with Source Current and Temperature.

6.2Typical Characterisitics



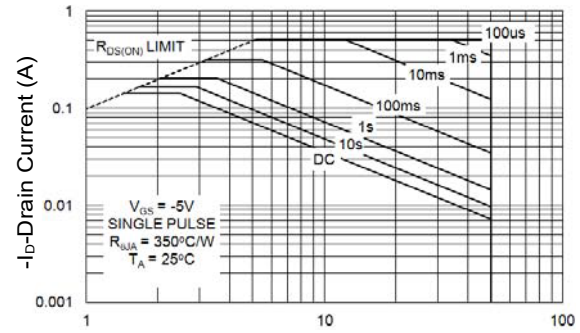
Qg, Gate Charge (nC)

Figure 7: Gate-Charge Characteristics



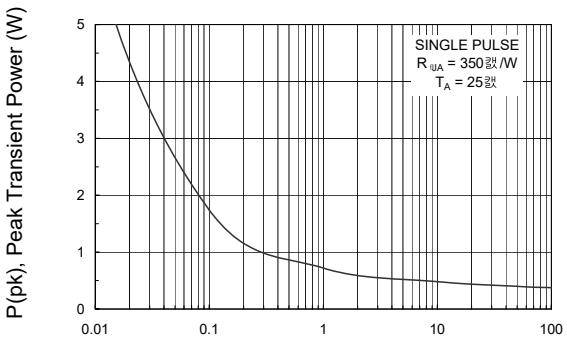
-V_{DS}, Drain To Source Voltage (V)

Figure 8: Capacitance Characteristics



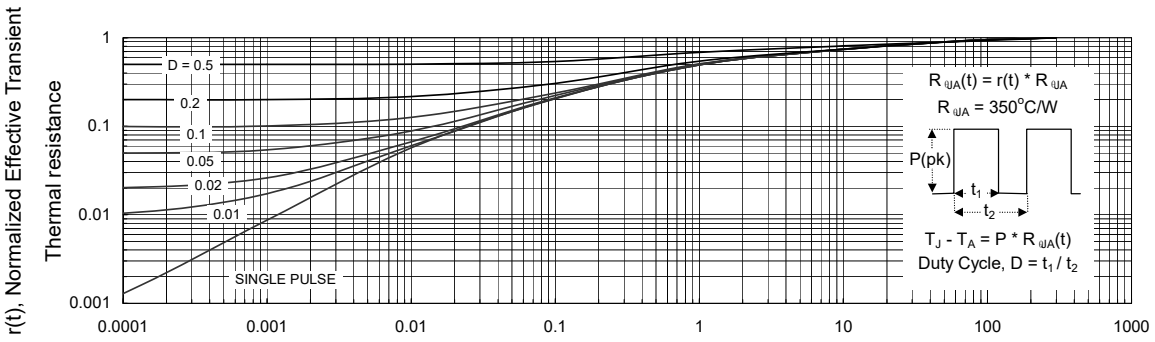
-V_{DS}(V)

Figure 9: Maximum Safe Operating Area.



t1, TIME(sec)

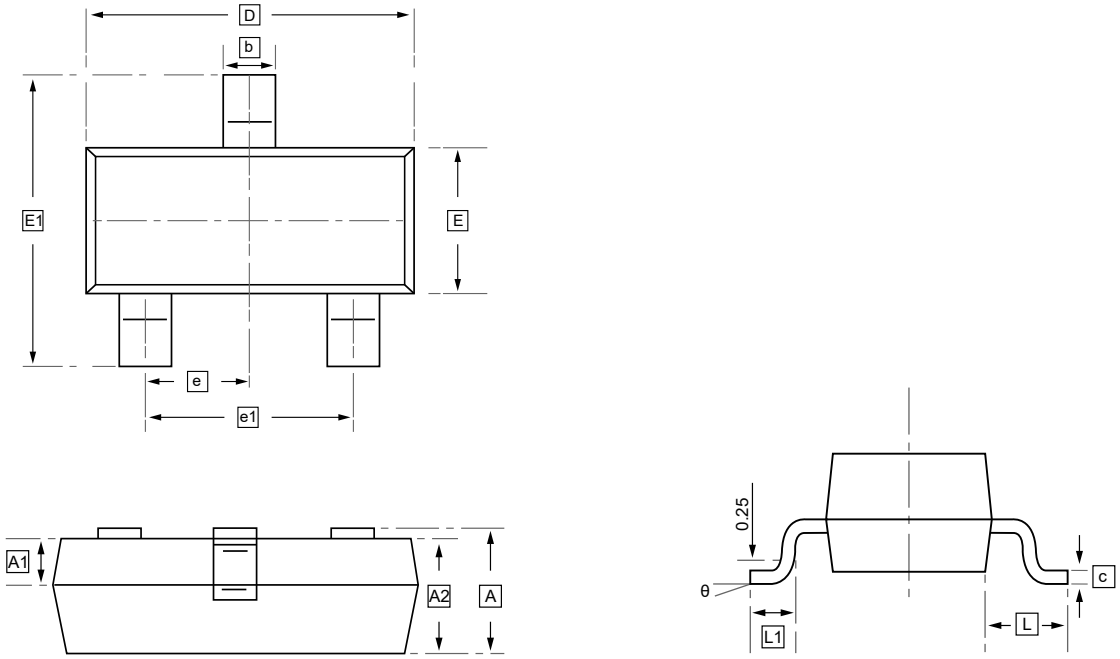
Figure 10: Single Pulse Maximum Power Dissipation.



t1, TIME (sec)

Figure 11. Transient Thermal Response Curve.

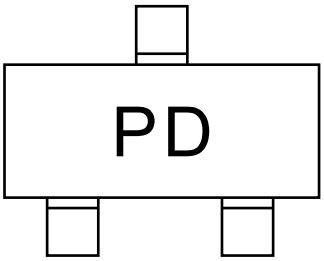
7.SOT-23 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E	E1	e	e1	L	L1	θ
Min	0.900	0.000	0.900	0.300	0.080	2.800	1.200	2.250	0.950	1.800	0.550	0.300	0°
Max	1.150	0.100	1.050	0.500	0.150	3.000	1.400	2.550	TYP.	2.000	REF.	0.500	8°

8.Ordering Information



Order Code	Package	Base QTY	Delivery Mode
UMW BSS84	SOT-23	3000	Tape and reel

9.Disclaimer

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