85V 3.2mΩ N-Ch Power MOSFET

Features

- Ultra-low $R_{DS(ON)}$
- Low Gate Charge
- 100% UIS Tested, 100% R_g Tested
- Pb-free Lead Plating
- Halogen-free and RoHS-compliant

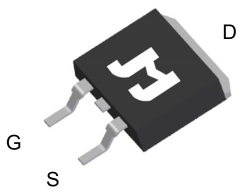
Product Summary

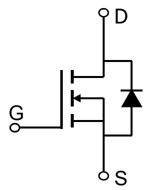
Parameter	Value	Unit
V_{DS}	85	V
$V_{GS(th)\_Typ}$	2.8	V
I_D (@ V_{GS} = 10V) (1)	146	A
$R_{DS(ON)\_Typ}$ (@ V_{GS} = 10V)	3.2	mΩ

Applications

- Power Managerment in Telecom., Industrial Automation, CE
- Motor Driving in Power Tool, E-vehicle, Robotics
- Current Switching in DC/DC & AC/DC (SR) Sub-systems

TO-263-3L Top View



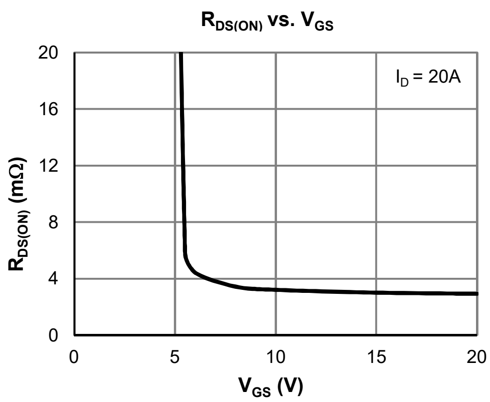


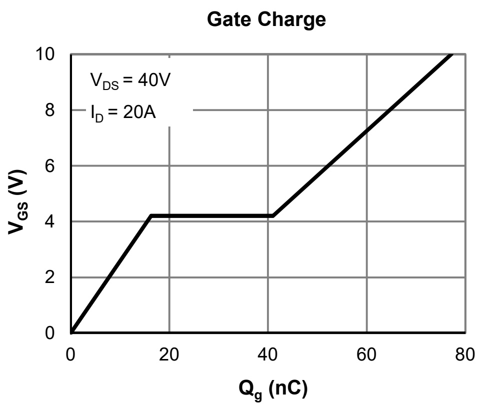
Ordering Information

Device	Package	# of Pins	Marking	MSL	T_J (°C)	Media	Quantity (pcs)
JMSH0804CE-13	TO-263-3L	3	SH0804C	1	-55 to 150	13-inch Reel	1000

Absolute Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter		Symbol	Value	Unit
Drain-to-Source Voltage		V_{DS}	85	V
Gate-to-Source Voltage		V_{GS}	±20	V
Continuous Drain Current (1)	T_C = 25°C	I_D	146	A
	T_C = 100°C		92	
Pulsed Drain Current (2)		I_{DM}	471	A
Avalanche Current (3)		I_{AS}	46	A
Avalanche Energy (3)		E_{AS}	317	mJ
Power Dissipation (4)	T_C = 25°C	P_D	156	W
	T_C = 100°C		63	
Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C





Electrical Characteristics (@ T_J = 25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 250µA, V_{GS} = 0V	85			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 68V, V_{GS} = 0V			1.0	µA
		T_J = 55°C			5.0	
Gate-Body Leakage Current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250µA	2.0	2.8	4.0	V
Static Drain-Source ON-Resistance	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 20A		3.2	4.0	mΩ
Forward Transconductance	g_{FS}	V_{DS} = 5V, I_D = 20A		78		S
Diode Forward Voltage	V_{SD}	I_S = 1A, V_{GS} = 0V		0.71	1.0	V
Diode Continuous Current	I_S	T_C = 25°C			156	A
DYNAMIC PARAMETERS (5)						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 40V, f = 1MHz		4114		pF
Output Capacitance	C_{oss}			1208		pF
Reverse Transfer Capacitance	C_{rss}			24		pF
Gate Resistance	R_g	V_{GS} = 0V, V_{DS}= 0V, f = 1MHz		1.5		Ω
SWITCHING PARAMETERS (5)						
Total Gate Charge (@ V_{GS} = 10V)	Q_g	V_{GS} = 0 to 10V V_{DS} = 40V, I_D = 20A		77		nC
Total Gate Charge (@ V_{GS} = 6.0V)	Q_g			52		nC
Gate Source Charge	Q_{gs}			25		nC
Gate Drain Charge	Q_{gd}			16.0		nC
Turn-On DelayTime	$t_{D(on)}$	V_{GS} = 10V, V_{DS} = 40V R_L = 2Ω, R_{GEN} = 6Ω		17.5		ns
Turn-On Rise Time	t_r			42		ns
Turn-Off DelayTime	$t_{D(off)}$			64		ns
Turn-Off Fall Time	t_f			48		ns
Body Diode Reverse Recovery Time	t_{rr}	I_F = 15A, dI_F/dt = 100A/µs		55		ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F = 15A, dI_F/dt = 100A/µs		50		nC

Thermal Performance

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	45	55	°C/W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.60	0.80	°C/W

Notes:

1. Computed continuous current assumes the condition of T_{J_Max} while the actual continuous current depends on the thermal & electro-mechanical application board design.
2. This single-pulse measurement was taken under T_{J_Max} = 150°C.
3. This single-pulse measurement was taken under the following condition [L = 300µH, V_{GS} = 10V, V_{DS} = 40V] while its value is limited by T_{J_Max} = 150°C.
4. The power dissipation P_D is based on T_{J_Max} = 150°C.
5. This value is guaranteed by design hence it is not included in the production test.

Typical Electrical & Thermal Characteristics

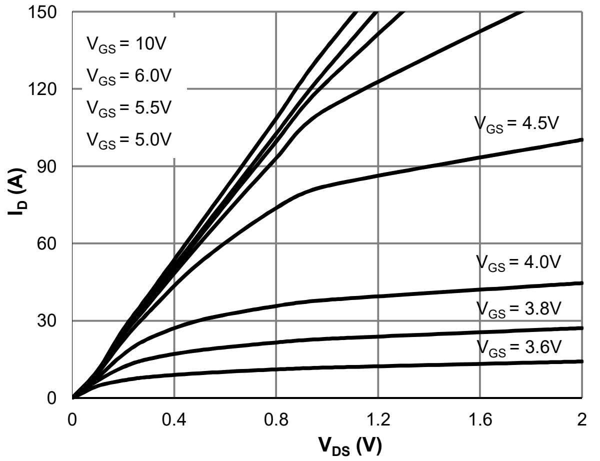


Figure 1: Saturation Characteristics

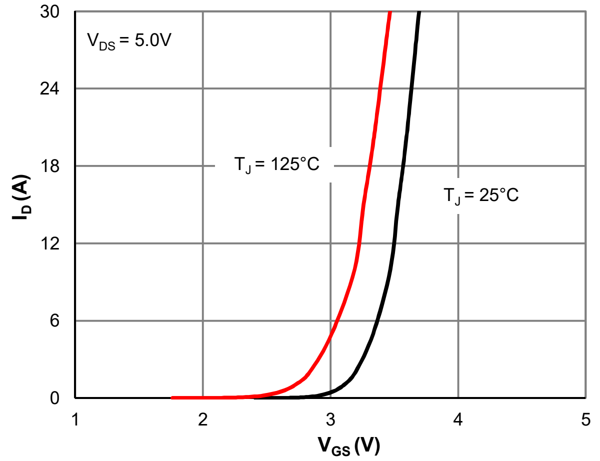


Figure 2: Transfer Characteristics

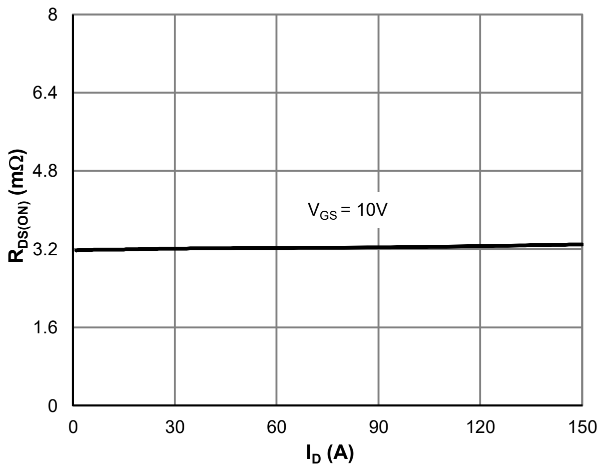


Figure 3: $R_{DS(ON)}$ vs. Drain Current

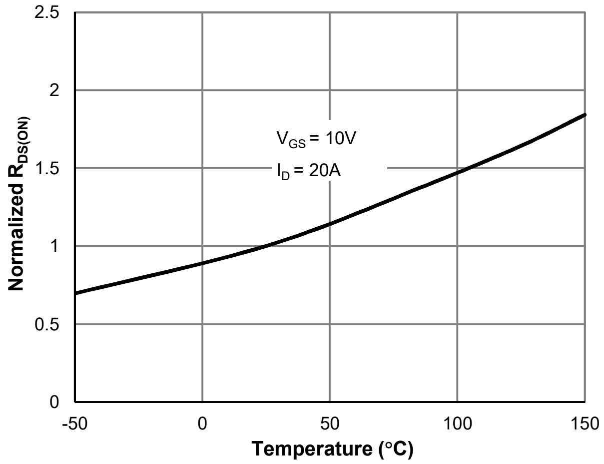


Figure 4: $R_{DS(ON)}$ vs. Junction Temperature

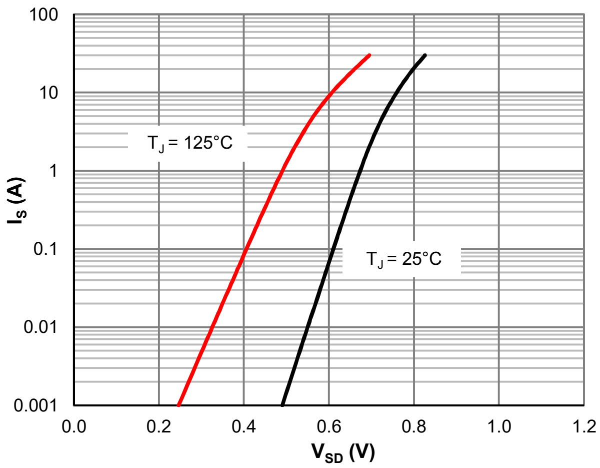


Figure 5: Body-Diode Characteristics

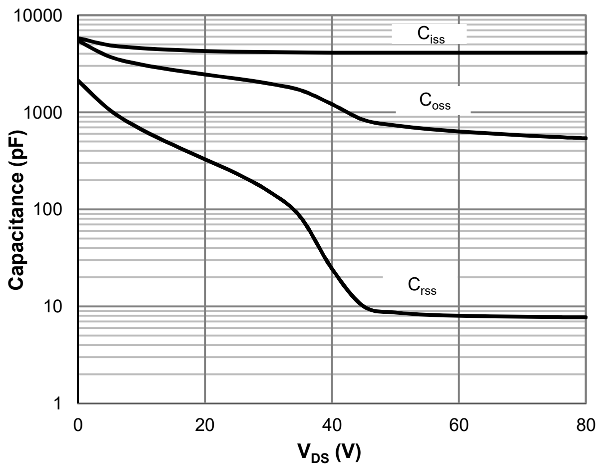


Figure 6: Capacitance Characteristics

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Typical Electrical & Thermal Characteristics

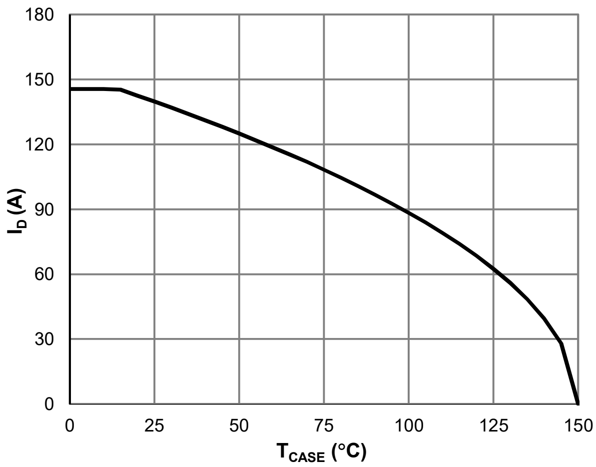


Figure 7: Current De-rating

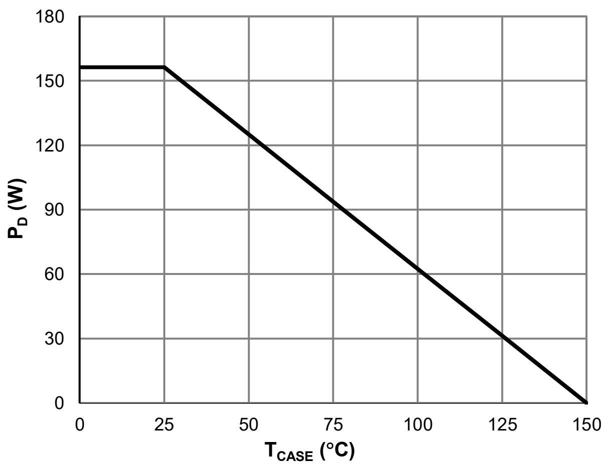


Figure 8: Power De-rating

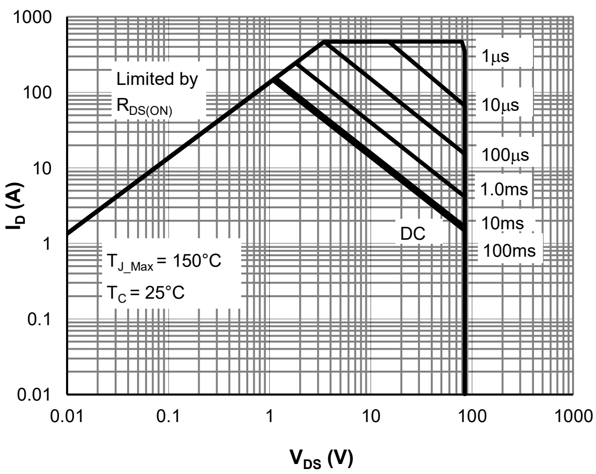


Figure 9: Maximum Safe Operating Area

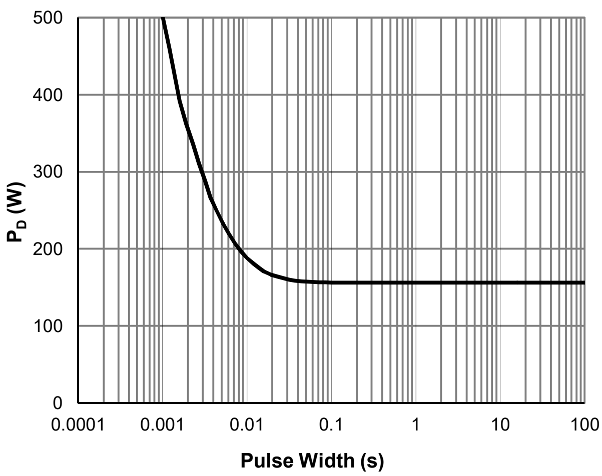


Figure 10: Single Pulse Power Rating, Junction-to-Case

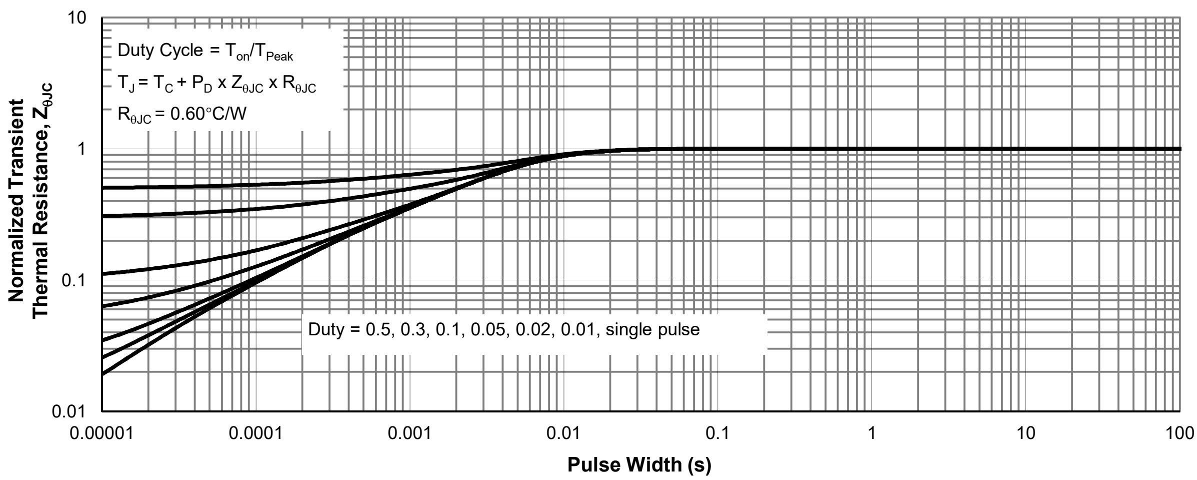
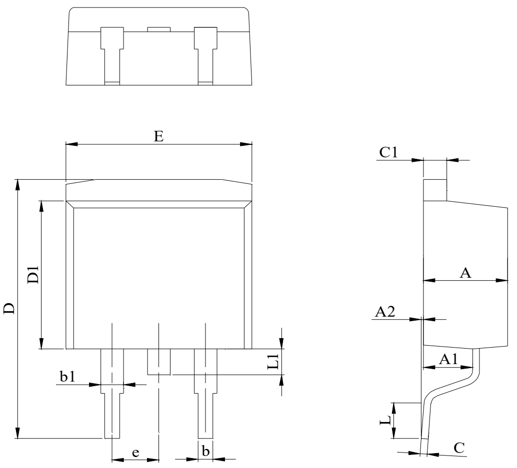


Figure 11: Normalized Maximum Transient Thermal Impedance

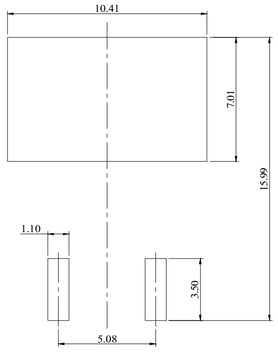
TO-263-3L Package Information

Package Outline



DIM.	MILLIMETER		
	MIN.	NOM.	MAX.
A	4.24		4.77
A1	2.30		2.89
A2	0.00	0.10	0.25
b	0.70		0.96
b1	1.17		1.70
C	0.30		0.60
C1	1.15		1.42
D	14.10		15.88
D1	8.50		9.60
E	9.78		10.36
L	1.78		2.79
L1			1.75
e		2.54	

Recommended Footprint



DIMENSIONS: MILLIMETERS

单击下面可查看定价，库存，交付和生命周期等信息

>>JJW(捷捷微)