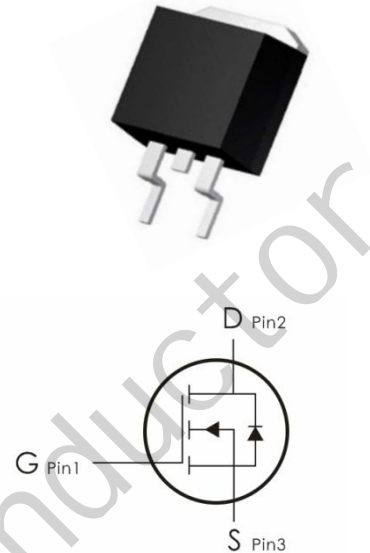


**Features:**

- Low Intrinsic Capacitances.
- Excellent Switching Characteristics.
- Extended Safe Operating Area.
- Unrivalled Gate Charge :Qg=76nC (Typ.).
- BVDSS=80V, I<sub>D</sub>=100A
- R<sub>DS(on)</sub> : 8.2mΩ (Max) @V<sub>G</sub>=10V
- 100% Avalanche Tested



**Absolute Maximum Ratings** (T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Parameter	Maximum	Unit
V <sub>DSS</sub>	Drain-to-Source Voltage	80	V
V <sub>GSS</sub>	Gate-to-Source Voltage	±25	V
I <sub>D</sub> <sup>3</sup>	Continuous Drain Current	T <sub>C</sub> =25°C	100
		T <sub>C</sub> =100°C	70
I <sub>DP</sub> <sup>4</sup>	Pulsed Drain Current	T <sub>C</sub> =25°C	340
I <sub>AS</sub> <sup>5</sup>	Avalanche Current	20	A
E <sub>AS</sub> <sup>5</sup>	Avalanche energy	410	mJ
PD	Maximum Power Dissipation	T <sub>C</sub> =25°C	240
		T <sub>C</sub> =100°C	100
T <sub>J</sub> , T <sub>STG</sub>	Junction & Storage Temperature Range	-55~175	°C

**Thermal Characteristics**

Symbol	Parameter	Typical	Unit
R <sub>θjc</sub>	Thermal Resistance-Junction to Case	0.52	°C/W
R <sub>θja</sub>	Thermal Resistance-Junction to Ambient	55	

**Electrical Characteristics** (TA=25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ	Max.	Unit
<b>Static Characteristics</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	80	—	—	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =64V, V <sub>GS</sub> =0V	—	—	1	uA
		T <sub>J</sub> =125°C	—	—	100	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	2	3	4	V
I <sub>GSS</sub>	Gate Leakage Current	V <sub>GS</sub> =±25V, V <sub>DS</sub> =0V	—	—	±100	nA
R <sub>DS(on)</sub> <sup>1</sup>	Drain-Source On-Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =40A	—	7.4	8.2	mΩ
			—	—	—	
<b>Diode Characteristics</b>						
V <sub>SD</sub> <sup>1</sup>	Diode Forward Voltage	I <sub>SD</sub> =40A, V <sub>GS</sub> =0V	—	—	1.3	V
I <sub>S</sub> <sup>3</sup>	Diode Continuous Forward Current		—	—	100	A
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> =40A,	—	25	—	nS
Q <sub>rr</sub>	Reverse Recovery Charge	di/dt=100A/us	—	18.5	—	nC
<b>Dynamic Characteristics<sup>2</sup></b>						
R <sub>G</sub>	Gate Resistance	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, Frequency=1MHz	—	1.3	—	Ω
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V, V <sub>DS</sub> =25V Frequency=1MHz	—	3850	—	pF
C <sub>oss</sub>	Output Capacitance		—	480	—	
C <sub>rss</sub>	Reverse Transfer Capacitance		—	278	—	
t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =37.5V, I <sub>D</sub> =40A, V <sub>GS</sub> =10V, R <sub>G</sub> =6.8Ω	—	20.4	—	nS
t <sub>r</sub>	Rise Time		—	63	—	
t <sub>d(off)</sub>	Turn-Off Delay Time		—	67	—	
t <sub>f</sub>	Fall Time		—	43	—	
<b>Gate Charge Characteristics<sup>2</sup></b>						
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =37.5V, V <sub>GS</sub> =10V I <sub>D</sub> =40A	—	76	—	nC
Q <sub>gs</sub>	Gate-to-Source Charge		—	9.5	—	
Q <sub>gd</sub>	Gate-to-Drain Charge		—	40	—	

Note: 1: Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%.

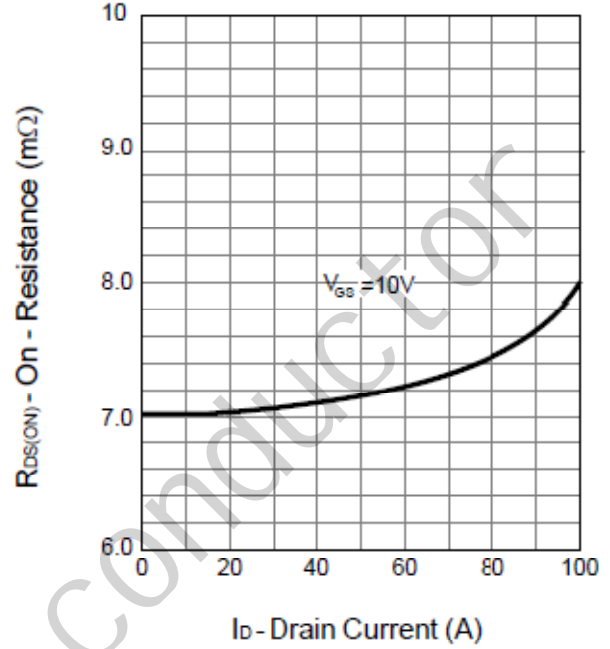
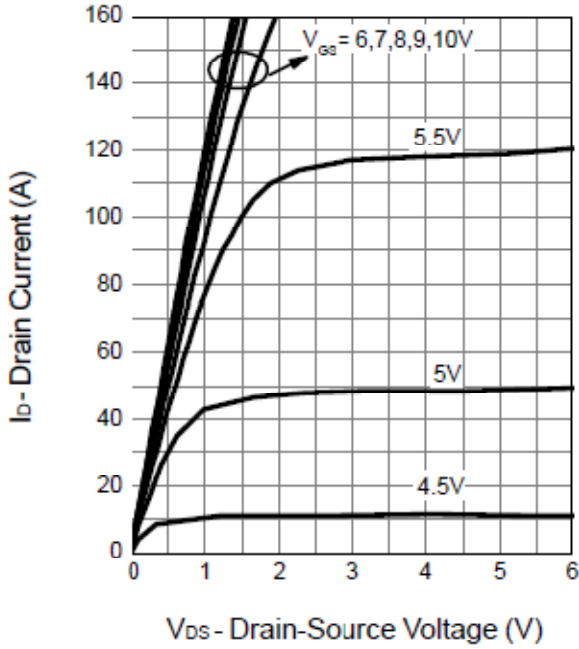
2: Guaranteed by design, not subject to production testing.

3: Package limitation current is 50A. Calculated continuous current based on maximum allowable junction temperature.

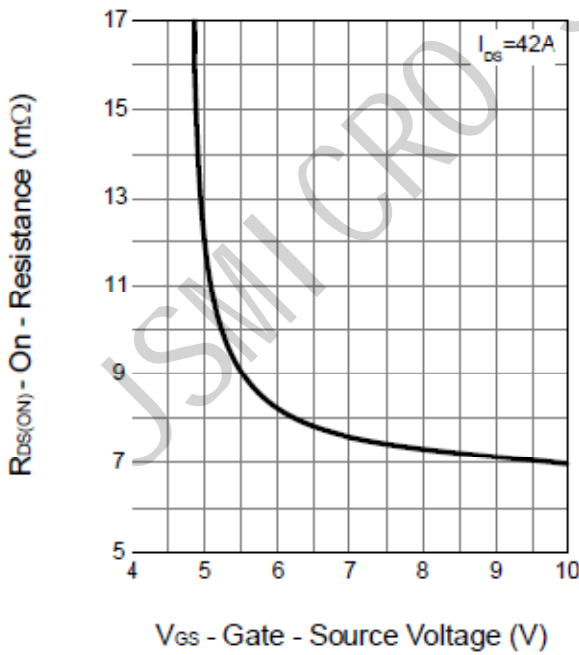
4: Repetitive rating, pulse width limited by max junction temperature.

5: Starting T<sub>J</sub> = 25°C, L = 1mH, I<sub>AS</sub> = 40A.

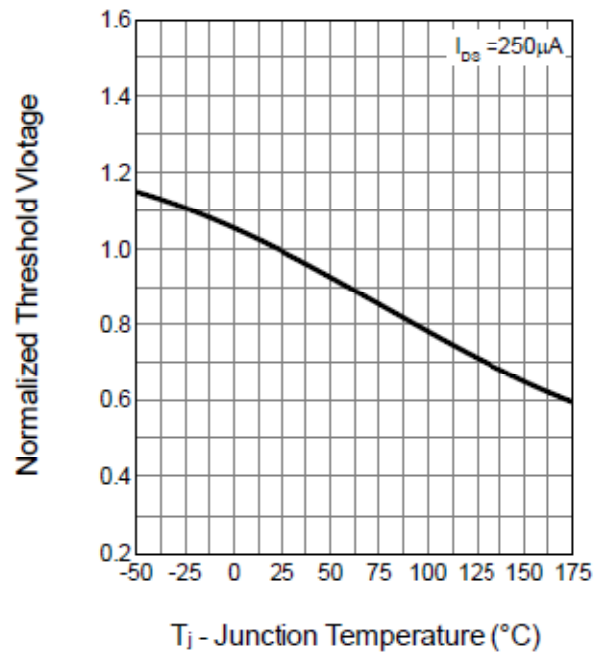
Typical Characteristics



Drain-Source On Resistance

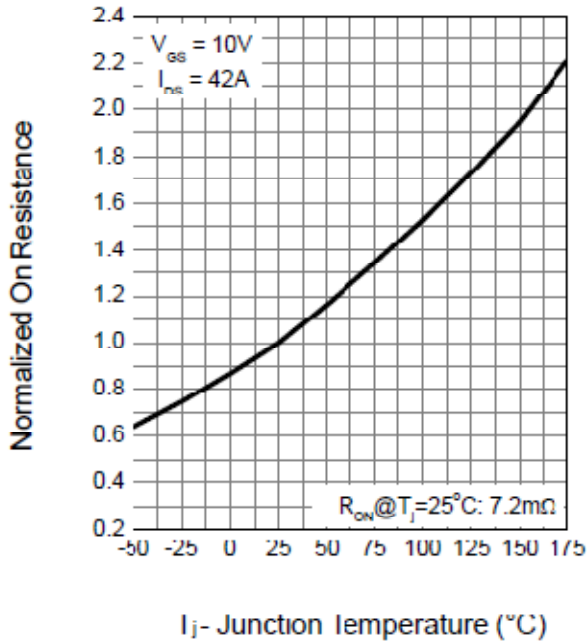


Gate Threshold Voltage

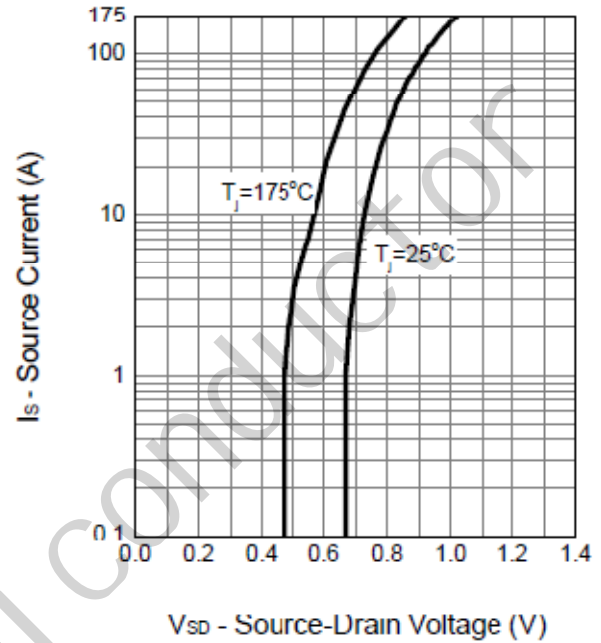


## Typical Characteristics (Continued)

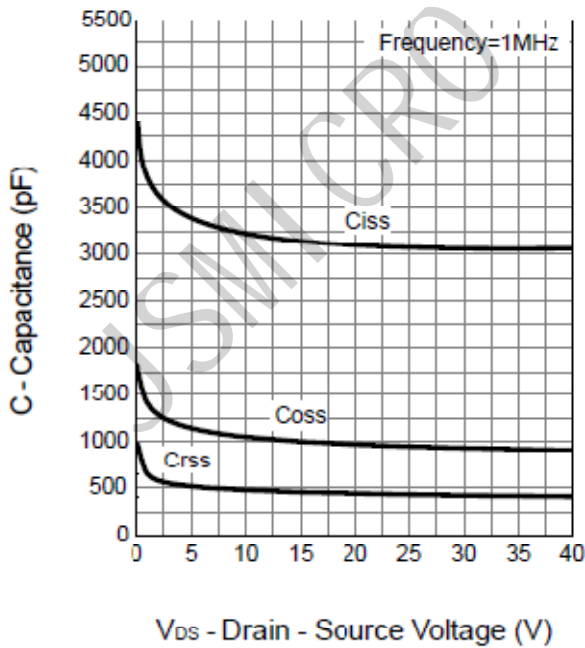
Drain-Source On Resistance



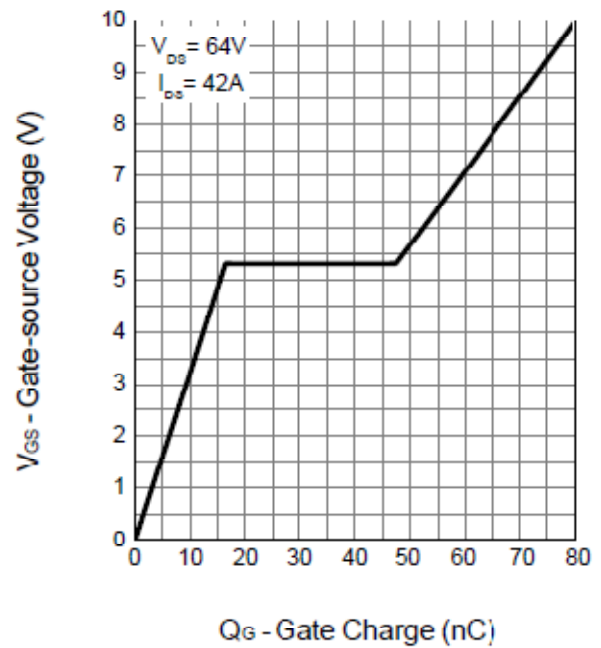
Source-Drain Diode Forward



Capacitance

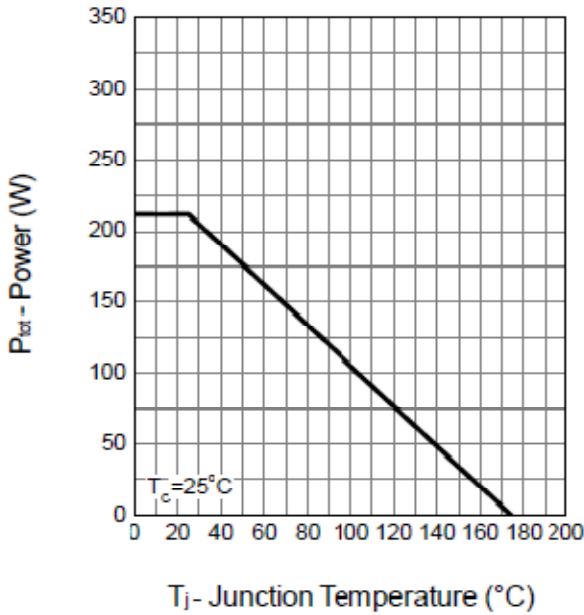


Gate Charge

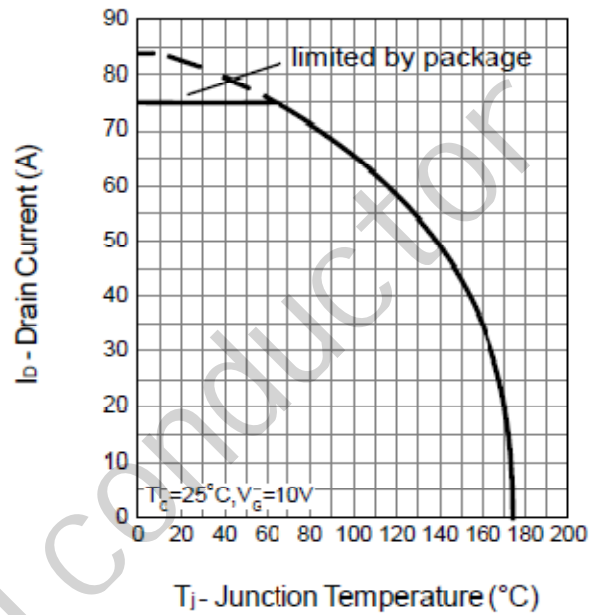


Typical Characteristics (Continued)

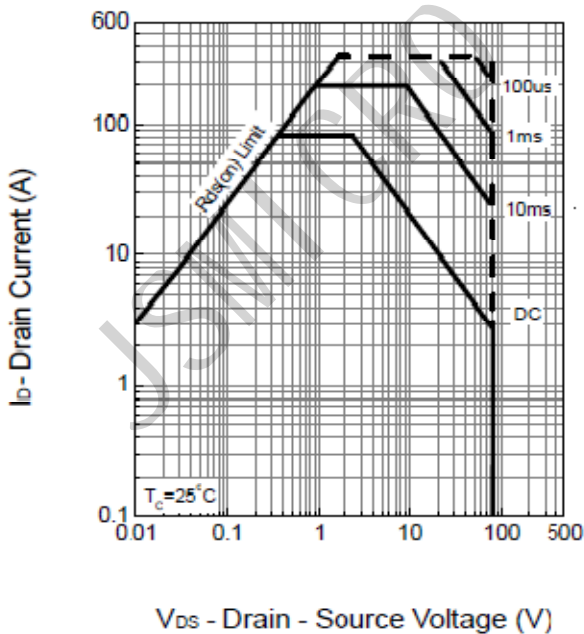
Power Dissipation



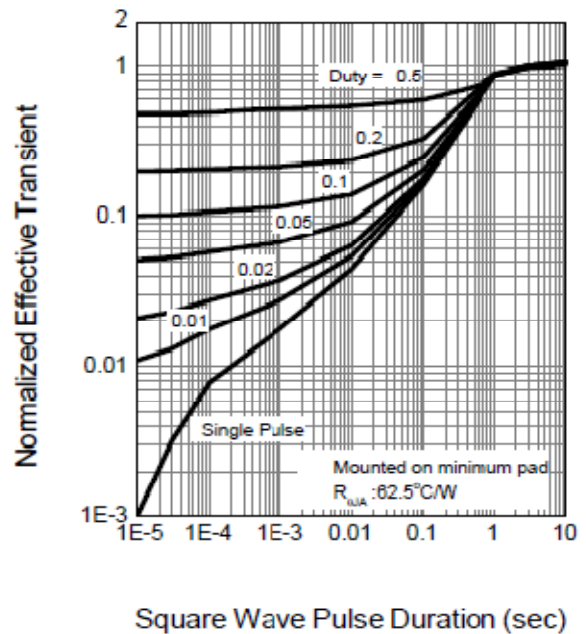
Drain Current



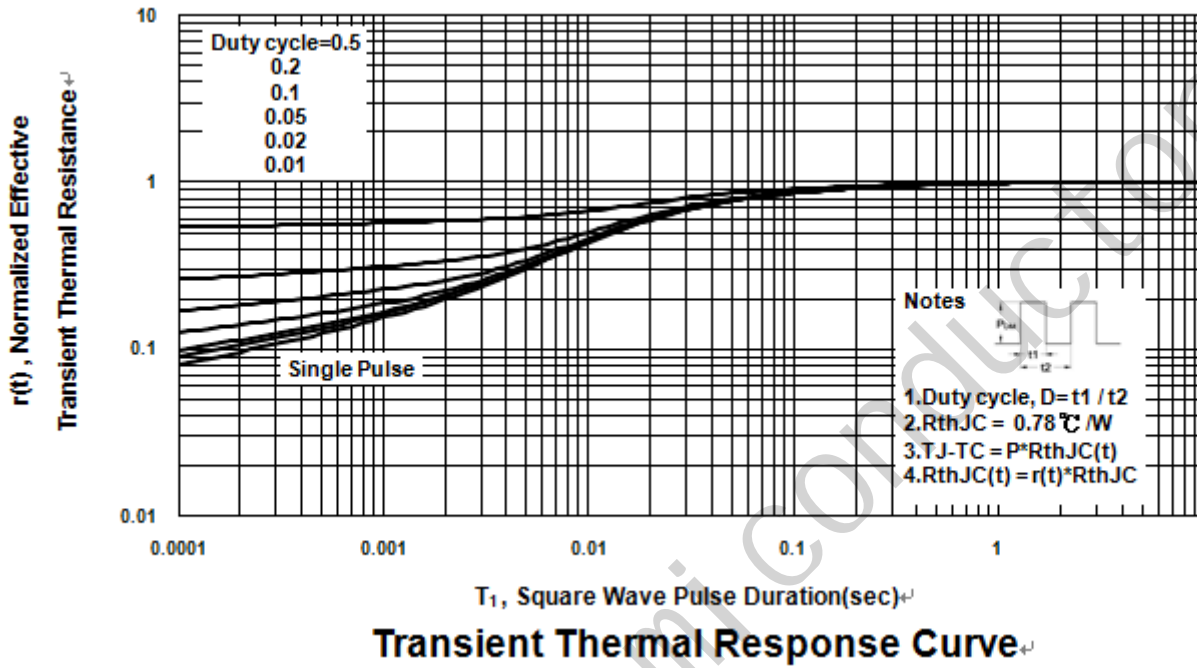
Safe Operation Area



Thermal Transient Impedance



Typical Characteristics (Continued)



Transient Thermal Response Curve

外形尺寸图 / Package Dimensions

TO-263

Unit: mm

