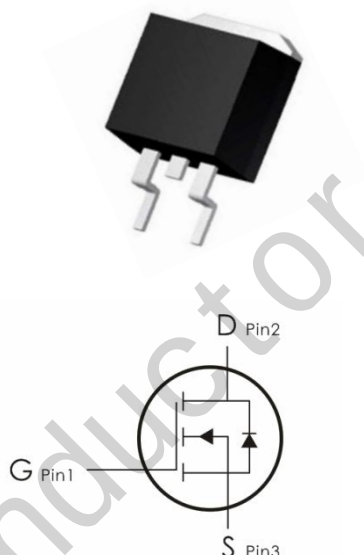


Features:

- ☐ Low Intrinsic Capacitances.
- ☐ Excellent Switching Characteristics.
- ☐ Extended Safe Operating Area.
- ☐ Unrivalled Gate Charge :Qg=76nC (Typ.).
- ☐ BVDSS=80V, I_D=100A
- ☐ R_{DS(on)} : 8.2mΩ (Max) @V_G=10V
- ☐ 100% Avalanche Tested


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

Symbol	Parameter		Maximum	Unit
V _{DSS}	Drain-to-Source Voltage		80	V
V _{GSS}	Gate-to-Source Voltage		±25	V
I _D ³	Continuous Drain Current	T _C =25°C	100	A
		T _C =100°C	70	
I _{DP} ⁴	Pulsed Drain Current	T _C =25°C	340	
I _{AS} ⁵	Avalanche Current		20	
E _{AS} ⁵	Avalanche energy		410	mJ
PD	Maximum Power Dissipation	T _C =25°C	240	W
		T _C =100°C	100	
T _J T _{STG}	Junction & Storage Temperature Range		-55~175	°C

Thermal Characteristics

Symbol	Parameter	Typical	Unit
Rθjc	Thermal Resistance-Junction to Case	0.52	°C/W
Rθja	Thermal Resistance-Junction to Ambient	55	

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

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

Note: 1: Pulse test; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

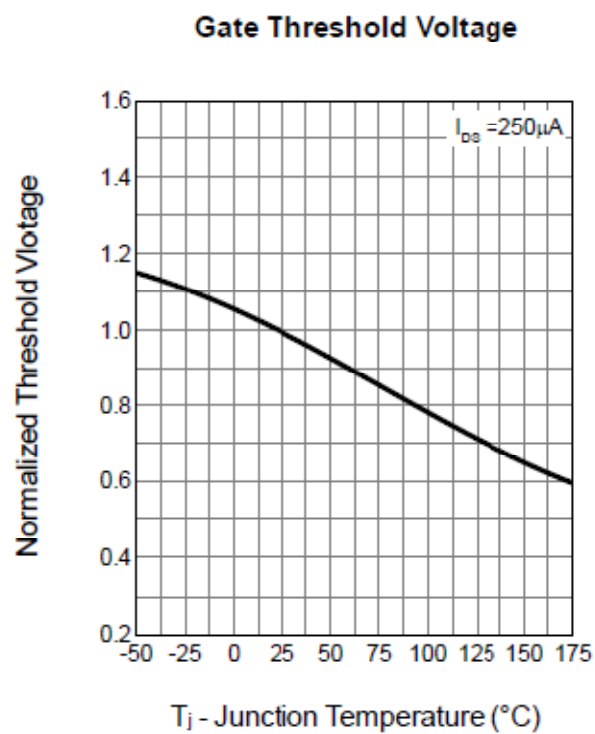
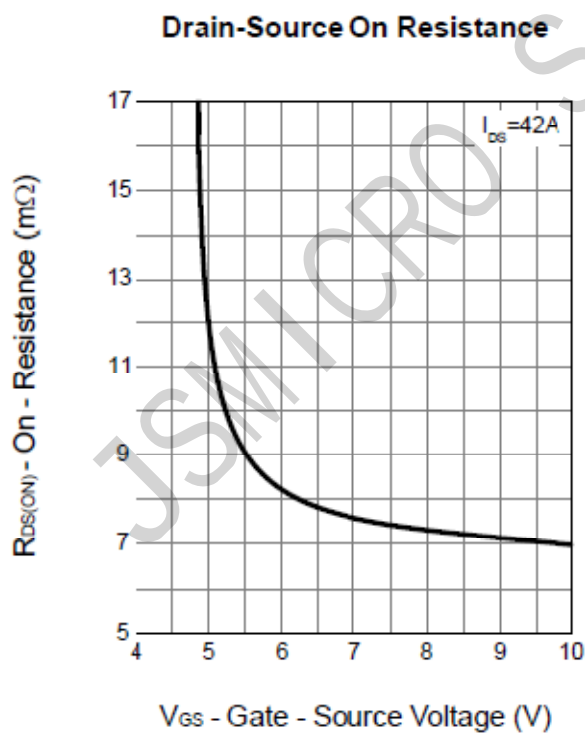
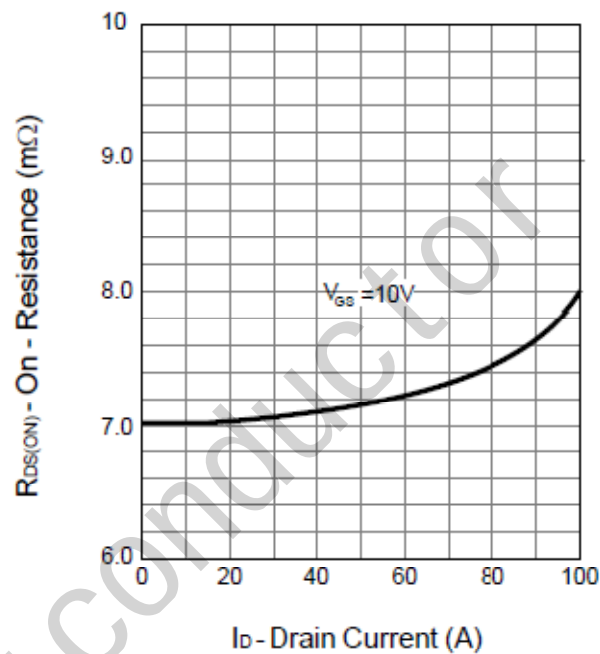
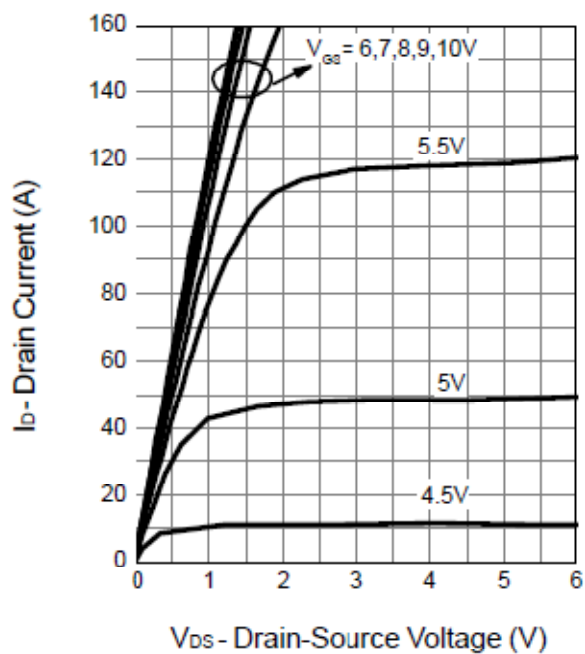
2: Guaranteed by design, not subject to production testing.

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.

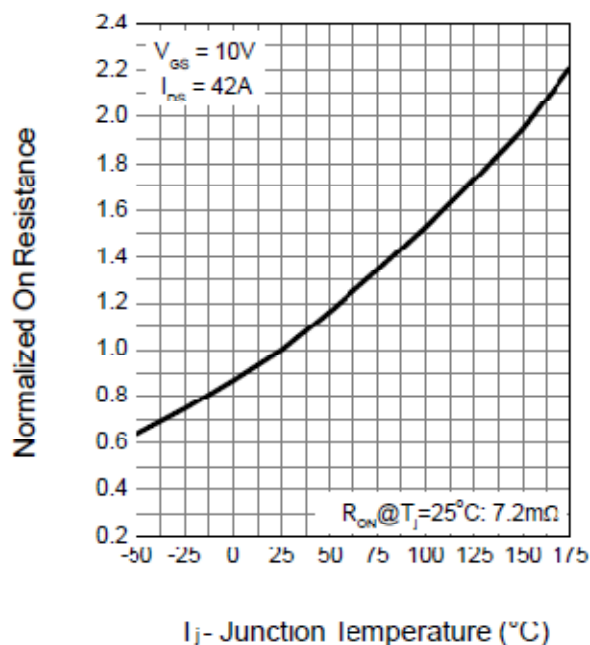
5: Starting $T_J = 25^\circ C, L = 1mH, I_{AS} = 40A$.

Typical Characteristics

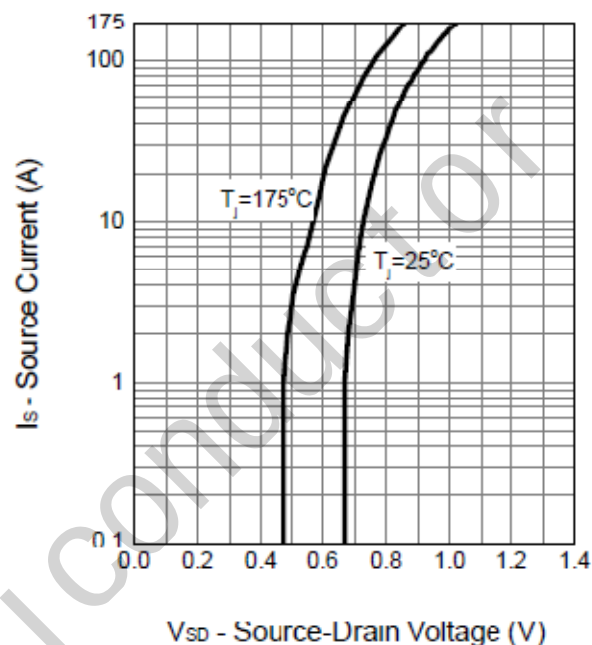


Typical Characteristics (Continued)

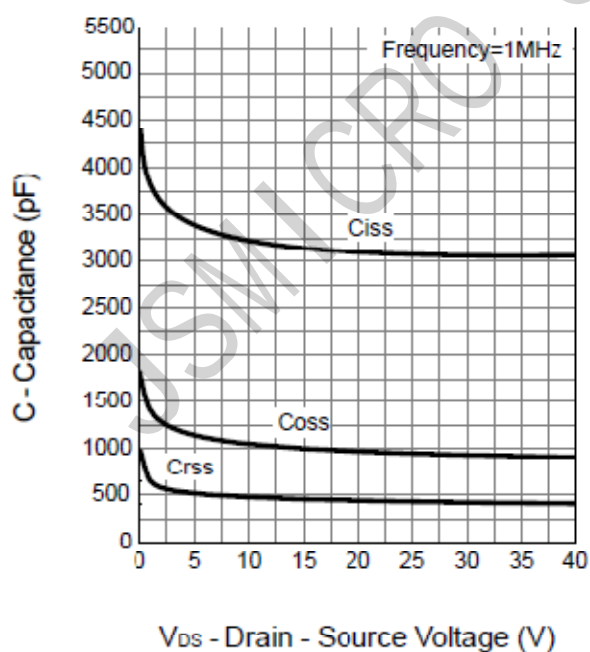
Drain-Source On Resistance



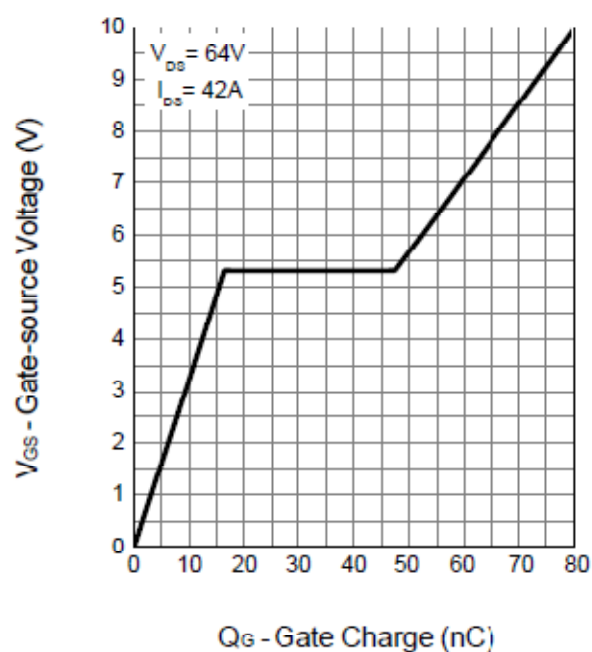
Source-Drain Diode Forward



Capacitance

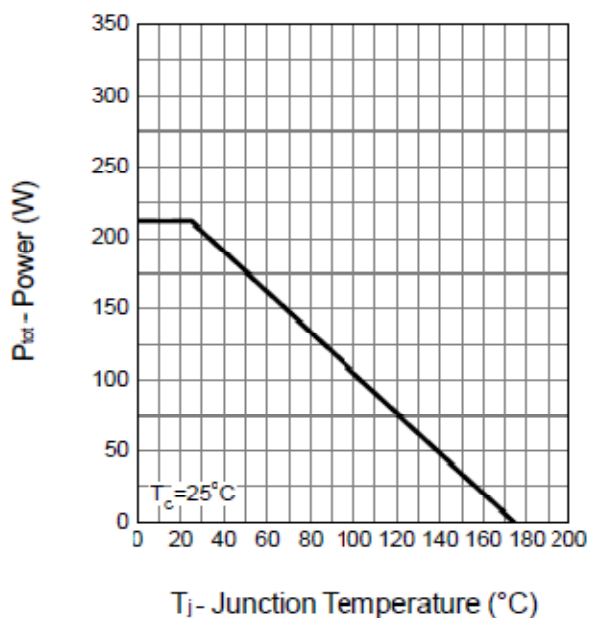


Gate Charge

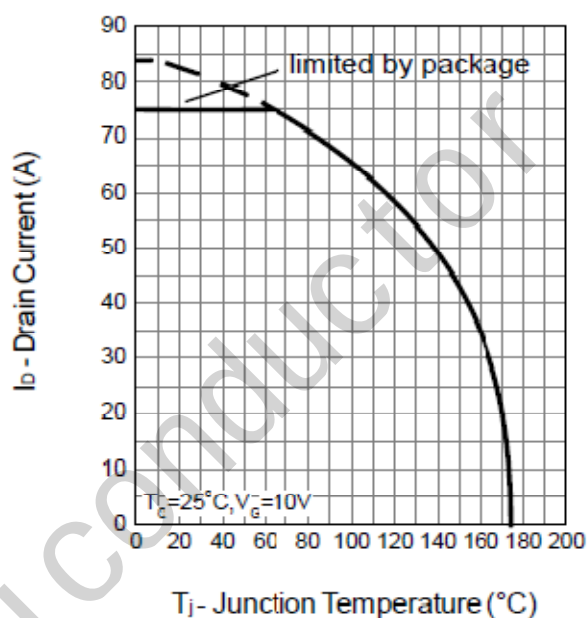


Typical Characteristics (Continued)

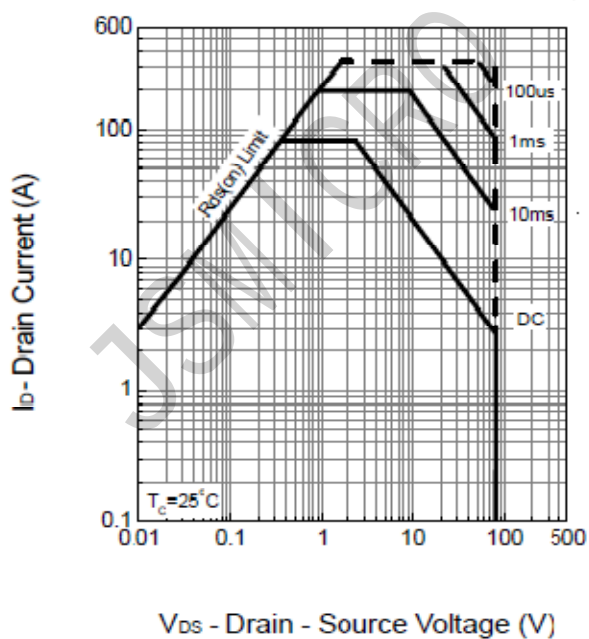
Power Dissipation



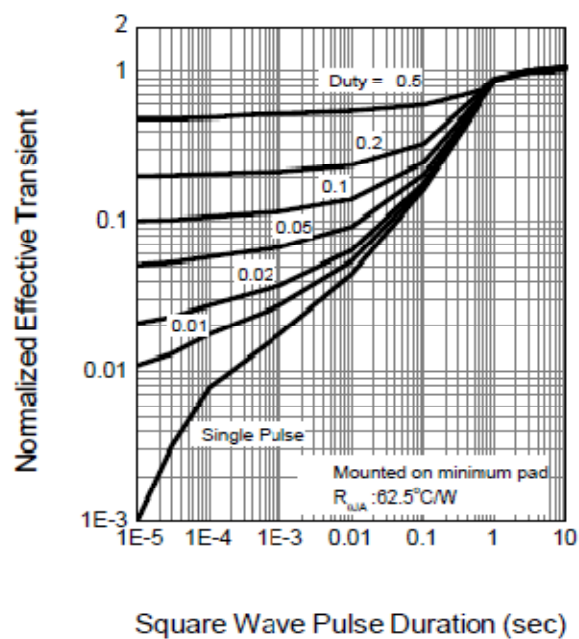
Drain Current



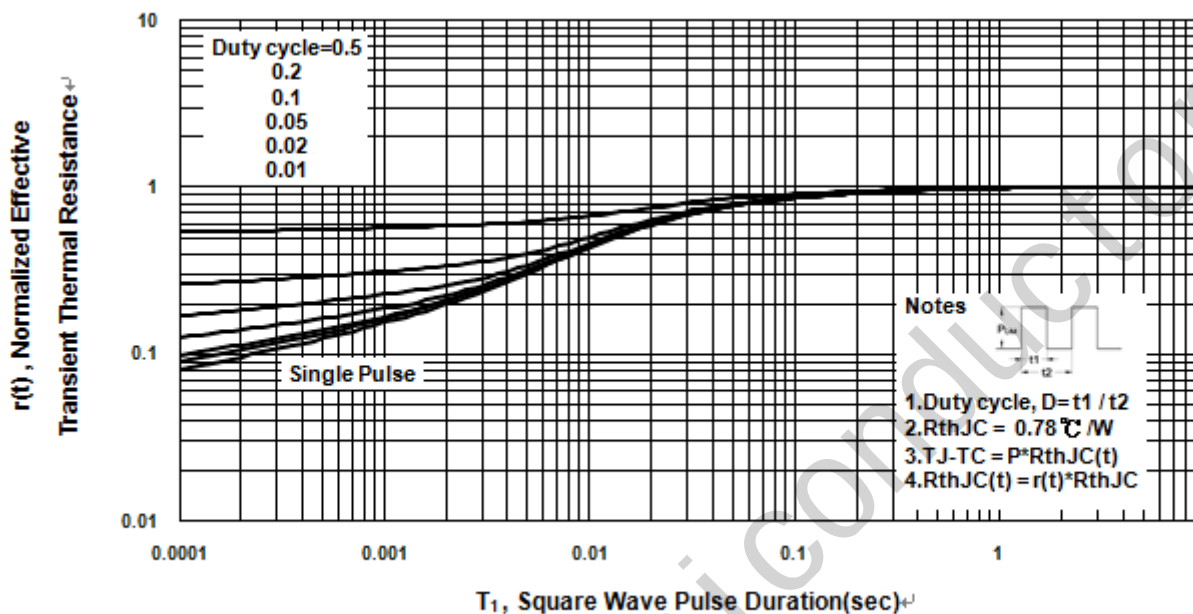
Safe Operation Area



Thermal Transient Impedance



Typical Characteristics (Continued)



Transient Thermal Response Curve

外形尺寸图 / Package Dimensions

TO-263

Unit: mm

