

P-Channel Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30	---	---	V
ΔBV _{DSS} /ΔT _J	BVDSS Temperature Coefficient	Reference to 25 °C, I _D =-1mA	---	-0.013	---	V/°C
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-10V, I _D =-3A	---	78	100	mΩ
		V _{GS} =-4.5V, I _D =-1.9A	---	120	170	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-1.3	-1.6	-2.5	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	2.3	---	mV/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-24V, V _{GS} =0V, T _J =25°C	---	---	-1	uA
		V _{DS} =-24V, V _{GS} =0V, T _J =85°C	---	---	-30	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±10	uA
g _{fs}	Forward Transconductance	V _{DS} =-5V, I _D =-3A	---	3.8	---	S
Q _g	Total Gate Charge (-4.5V)	V _{DS} =-15V, V _{GS} =-10V, I _D =-4.9A	---	3.3	---	nC
Q _{gs}	Gate-Source Charge		---	1.1	---	
Q _{gd}	Gate-Drain Charge		---	1.1	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =-15V, V _{GEN} =-10V, R _G =6Ω I _D =-1A, R _L =15 Ω	---	5.3	8	ns
T _r	Rise Time		---	9.3	---	
T _{d(off)}	Turn-Off Delay Time		---	15.4	---	
T _f	Fall Time		---	3.6	---	
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz	---	229	---	pF
C _{oss}	Output Capacitance		---	42	---	
C _{rss}	Reverse Transfer Capacitance		---	33	---	

Drain-Source Body Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source-Drain Diode Current ^{1,4}	V _G =V _D =0V, Force Current	---	---	-3.2	A
I _{SM}	Pulsed Diode Forward Current ^{2,4}		---	---	-13	A
V _{SD}	Body Diode Voltage ²	V _{GS} =0V, I _S =-1A, T _J =25°C	---	0.75	-1.1	V
t _{rr}	Reverse Recovery Time	I _F =-3.3A, dI/dt=100A/μs, T _J =25°C	---	19	---	nS
Q _{rr}	Reverse Recovery Charge		---	14	---	nC

Note :

1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.

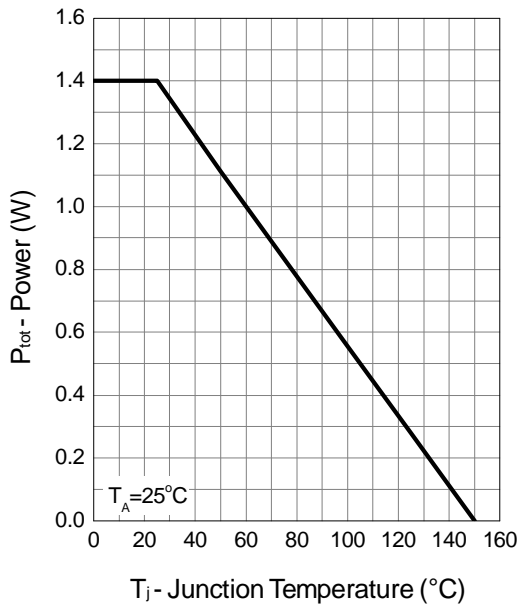
2.The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%

3.The power dissipation is limited by 150°C junction temperature

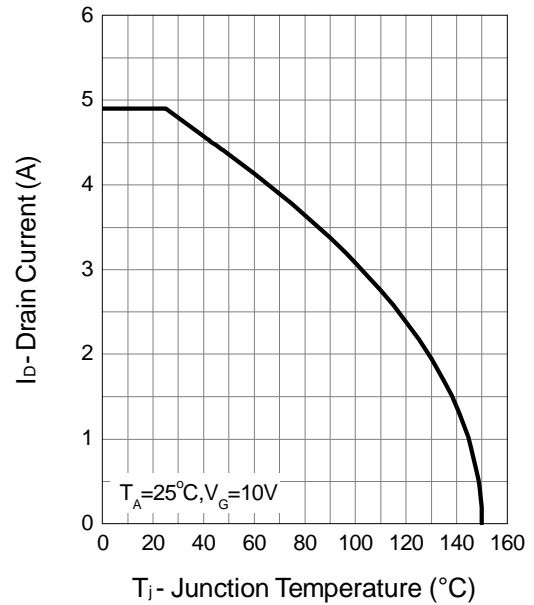
4.The data is theoretically the same as I_D and I_{DM}, in real applications, should be limited by total power dissipation.

N-Channel Typical Characteristics

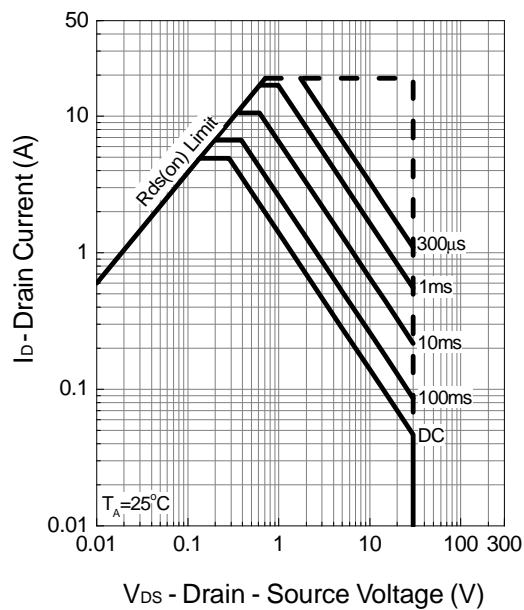
Power Dissipation



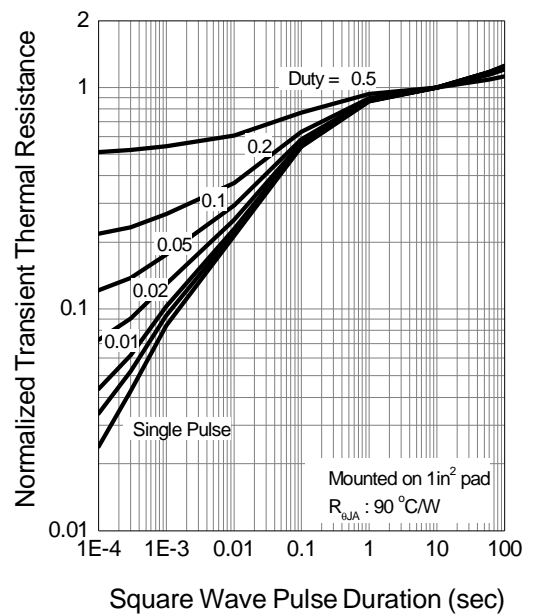
Drain Current



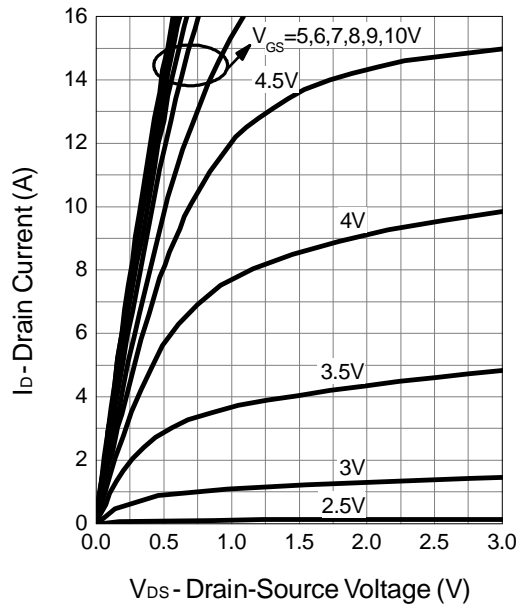
Safe Operation Area



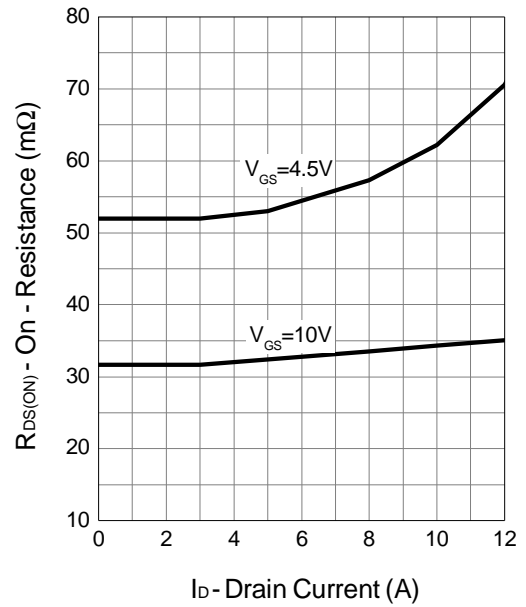
Thermal Transient Impedance



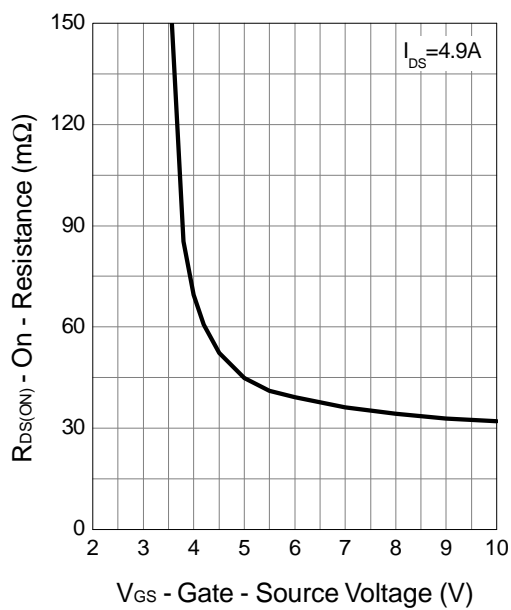
Output Characteristics



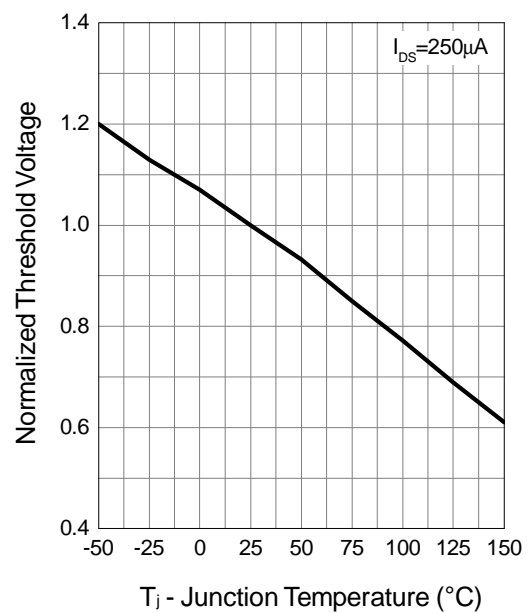
Drain-Source On Resistance



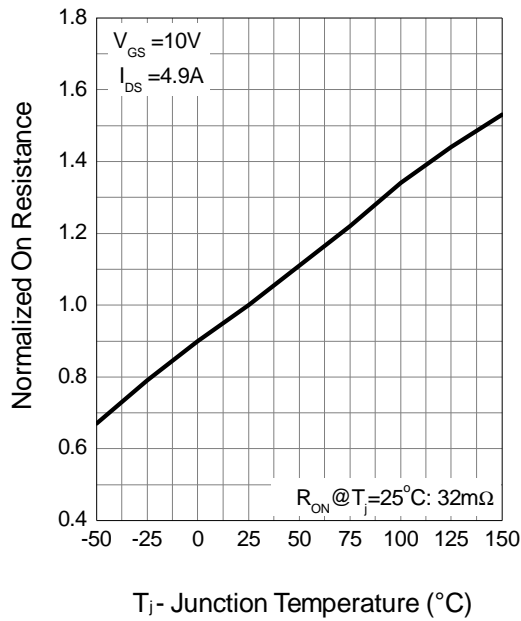
Gate-Source On Resistance



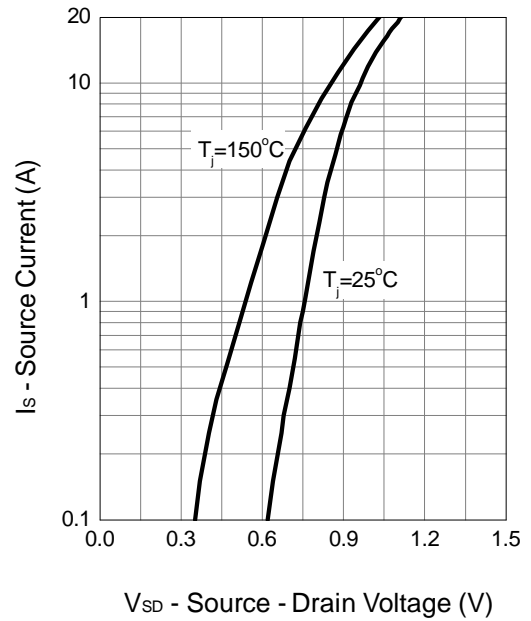
Gate Threshold Voltage



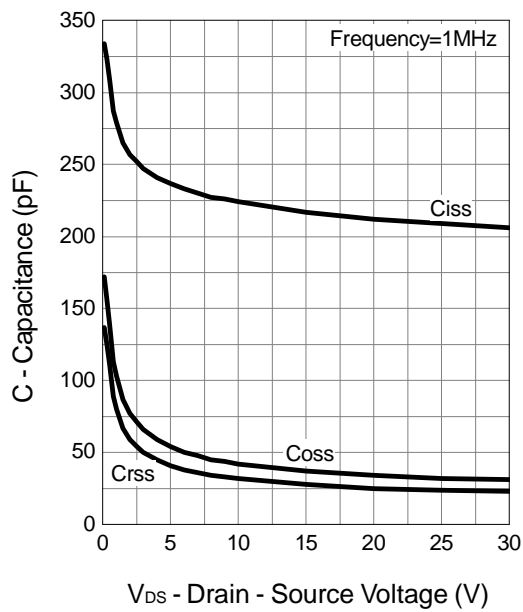
Drain-Source On Resistance



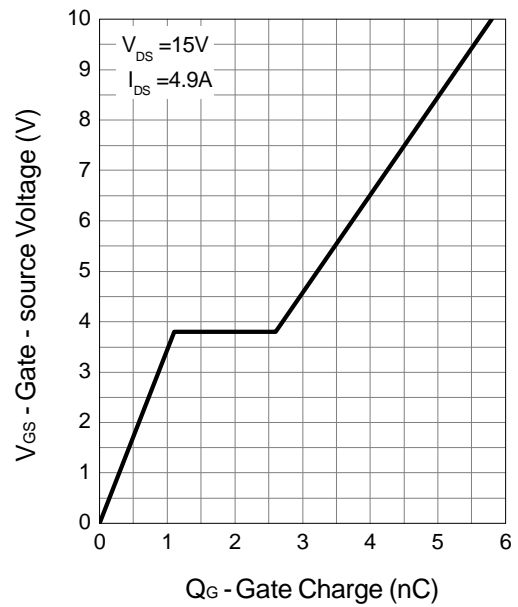
Source-Drain Diode Forward



Capacitance

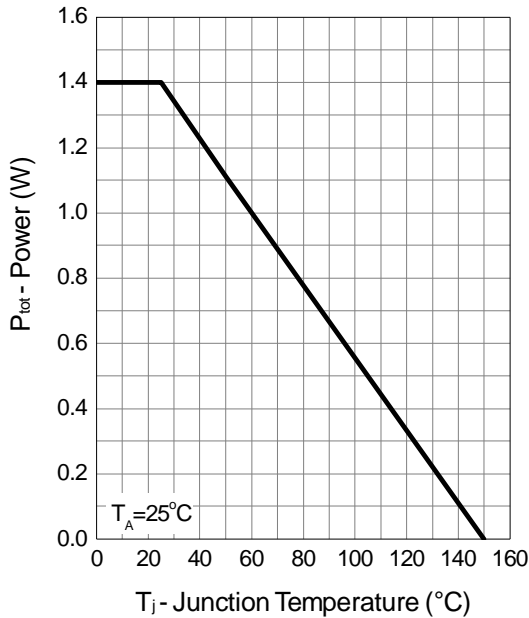


Gate Charge

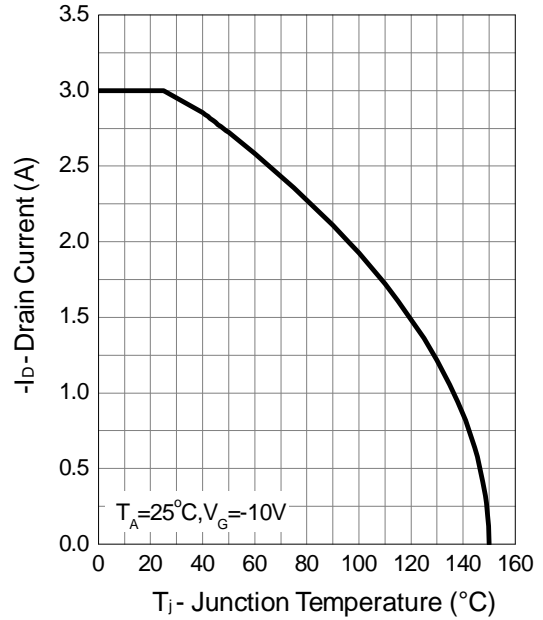


P-Channel Typical Characteristics

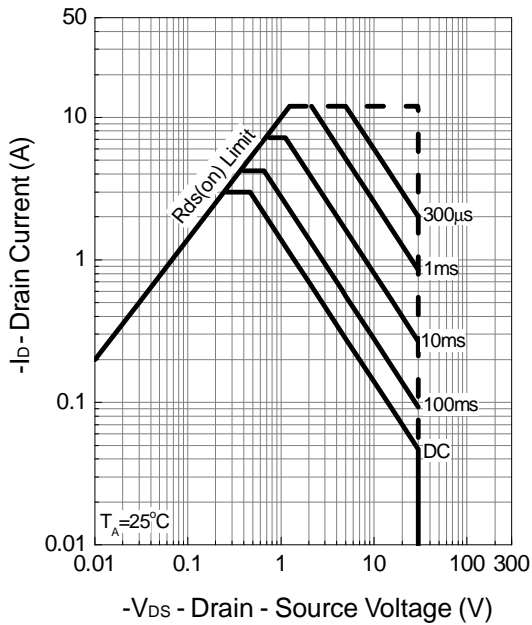
Power Dissipation



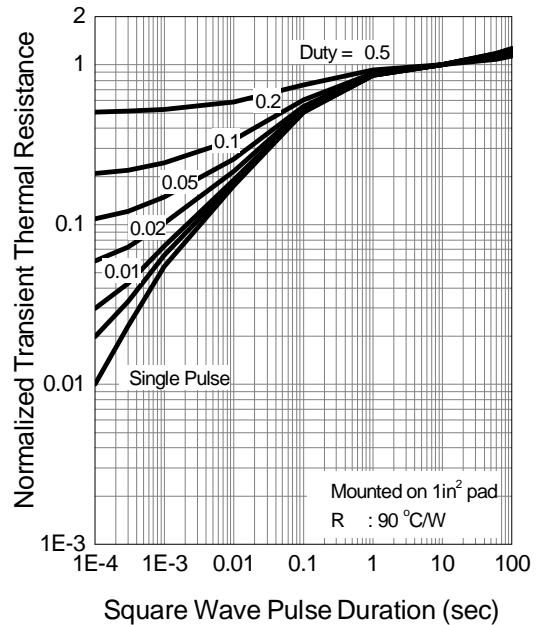
Drain Current



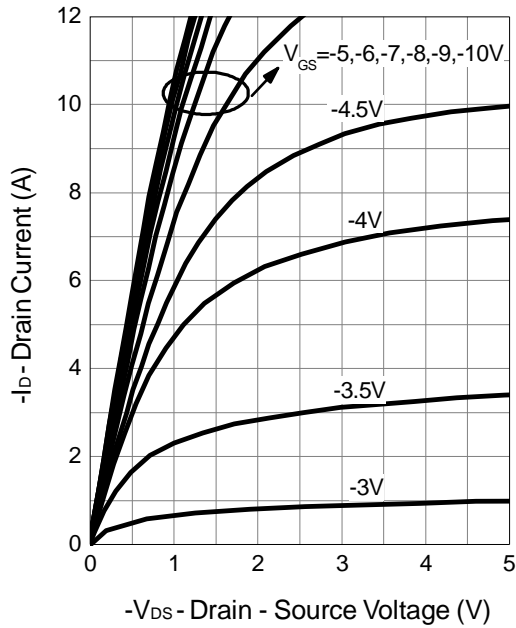
Safe Operation Area



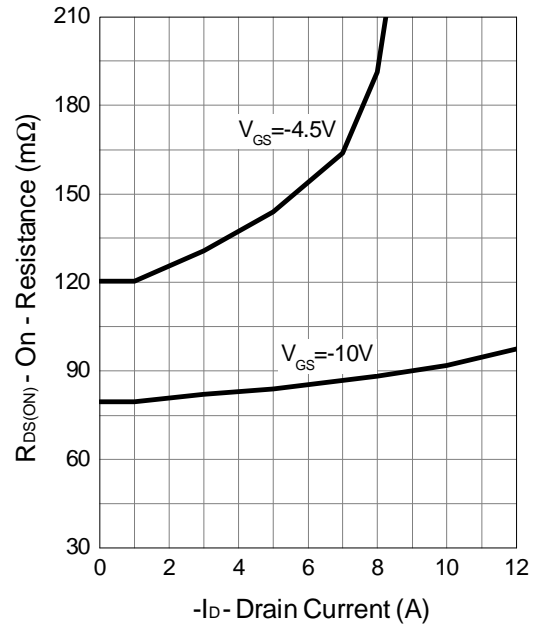
Thermal Transient Impedance



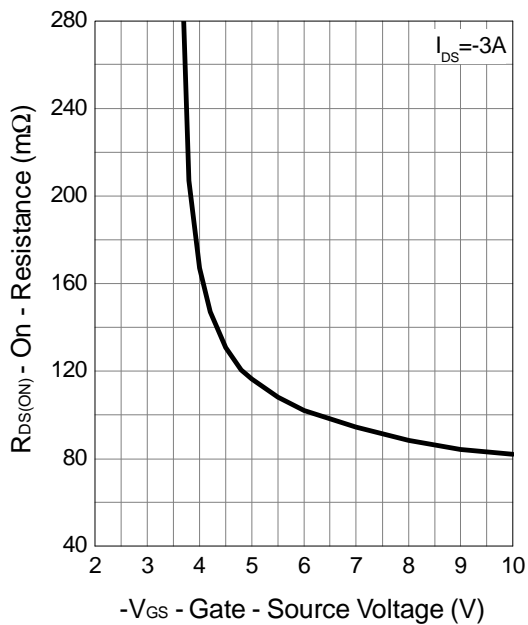
Output Characteristics



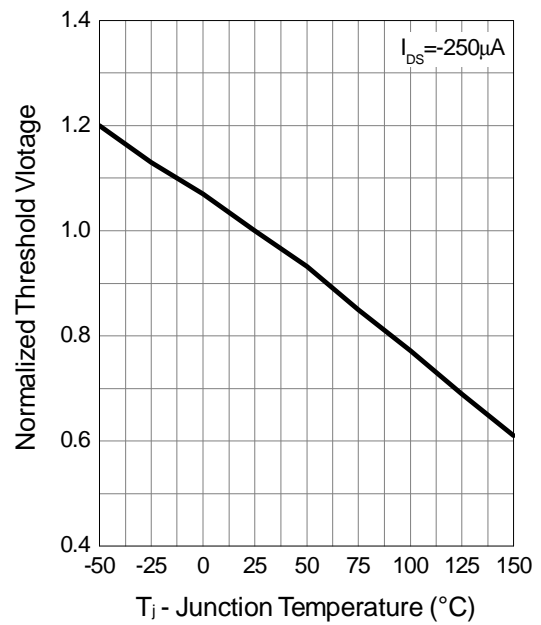
Drain-Source On Resistance



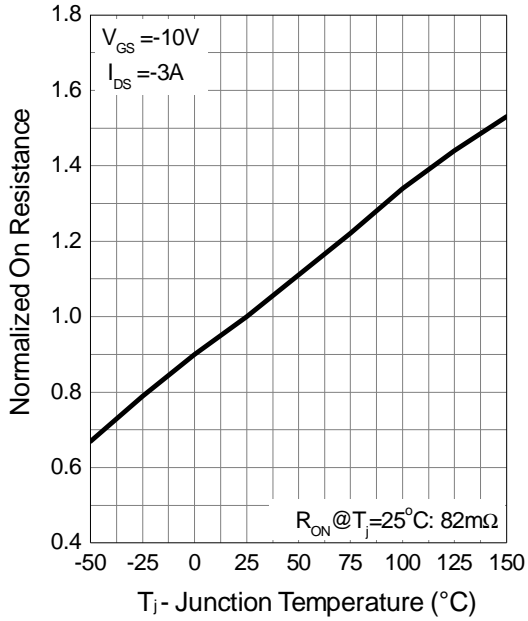
Gate-Source On Resistance



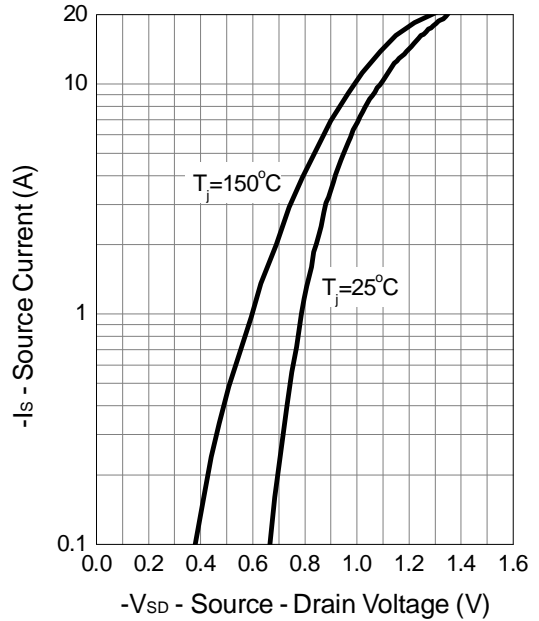
Gate Threshold Voltage



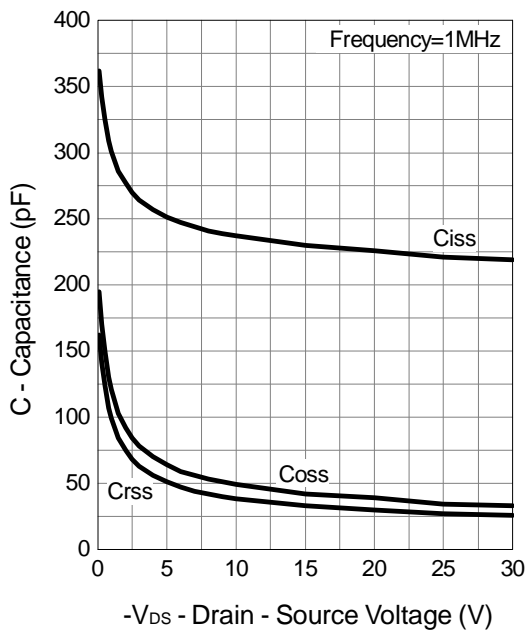
Drain-Source On Resistance



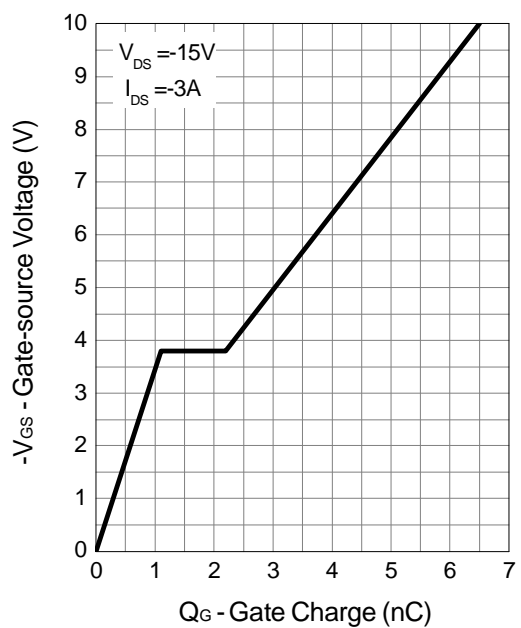
Source-Drain Diode Forward



Capacitance

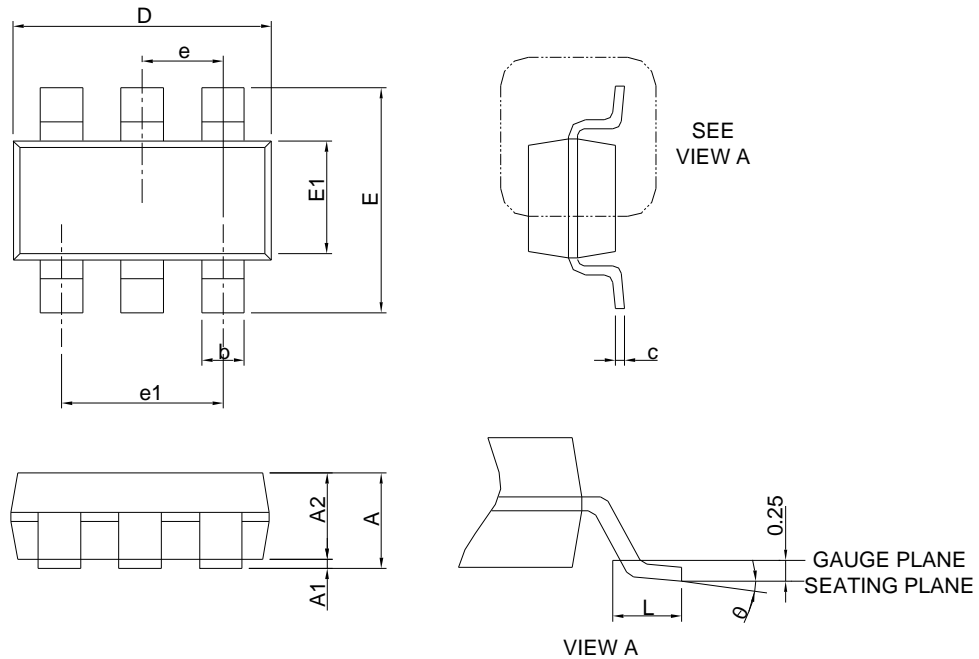


Gate Charge



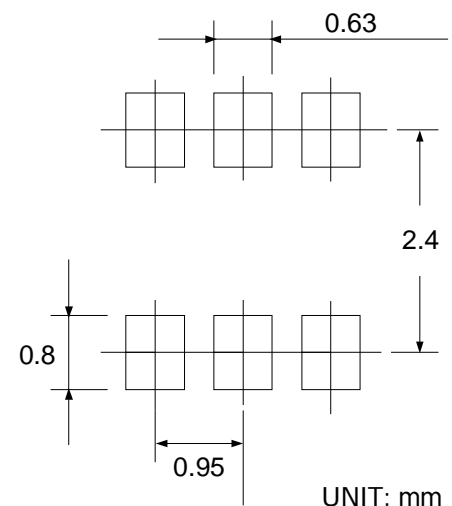
Package Information

SOT-23-6



DIMENSIONS	SOT-23-6			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	-	1.25	-	0.049
A1	0.00	0.05	0.000	0.002
A2	0.90	1.20	0.035	0.047
b	0.30	0.50	0.012	0.020
c	0.08	0.22	0.003	0.009
D	2.70	3.10	0.106	0.122
E	2.60	3.00	0.102	0.118
E1	1.40	1.80	0.055	0.071
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.30	0.60	0.012	0.024
θ	0°	8°	0°	8°

RECOMMENDED LAND PATTERN



Note : 1. Follow JEDEC TO-178 AB.

2. Dimension D and E1 do not include mold flash, protrusions or gate burrs. Mold flash, protrusion or gate burrs shall not exceed 10 mil per side.



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