

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V _{DSS}	20	V
Gate-Source Voltage			V _{GSS}	±8	V
Continuous Drain Current (Note 6) V _{GS} = 4.5V	Steady State	T _A = 25°C T _A = 70°C	I _D	4.0 3.1	A
	t<10s	T _A = 25°C T _A = 70°C	I _D	4.5 3.5	A
Pulsed Drain Current (10μs pulse, duty cycle = 1%)			I _{DM}	13	A
Maximum Body Diode Continuous Current			I _S	1.5	A

Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Units
Total Power Dissipation (Note 5)	T _A = 25°C	P _D	1	W
	T _A = 70°C		0.6	
Thermal Resistance, Junction to Ambient (Note 5)	Steady state	R _{θJA}	127	°C/W
	t<10s		91	
Total Power Dissipation (Note 6)	T _A = 25°C	P _D	1.5	W
	T _A = 70°C		0.9	
Thermal Resistance, Junction to Ambient (Note 6)	Steady state	R _{θJA}	85	°C/W
	t<10s		63	
Thermal Resistance, Junction to Case (Note 6)		R _{θJC}	3.1	
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV _{DSS}	20	—	—	V	V _{GS} = 0V, I _D = 250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1	μA	V _{DS} = 20V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±1	μA	V _{GS} = ±8V, V _{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V _{GS(th)}	0.6	—	1.0	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(on)}	—	32	55	mΩ	V _{GS} = 4.5V, I _D = 6A
		—	43	70		V _{GS} = 2.5V, I _D = 4.0A
		—	56	90		V _{GS} = 1.8V, I _D = 1.5A
		—	80	130		V _{GS} = 1.5V, I _D = 1.0A
Forward Transfer Admittance	Y _{fs}	—	8	—	S	V _{DS} = 10V, I _D = 6A
Diode Forward Voltage	V _{SD}	—	0.7	1.1	V	V _{GS} = 0V, I _S = 2A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iss}	—	555	—	pF	V _{DS} = 10V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	112	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	84	—	pF	
Total Gate Charge	Q _g	—	8.8	—	nC	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 6.5A
Gate-Source Charge	Q _{gs}	—	1.4	—	nC	
Gate-Drain Charge	Q _{gd}	—	3	—	nC	
Turn-On Delay Time	t _{D(on)}	—	53	—	ns	V _{DS} = 10V, I _D = 1.0A V _{GS} = 4.5V, R _G = 6Ω
Turn-On Rise Time	t _r	—	78	—	ns	
Turn-Off Delay Time	t _{D(off)}	—	561	—	ns	
Turn-Off Fall Time	t _f	—	234	—	ns	

- Notes:
- Device mounted on FR-4 PC board, with minimum recommended pad layout, single sided.
 - Device mounted on FR-4 substrate PC board, 2oz copper, with thermal bias to bottom layer 1inch square copper plate
 - Short duration pulse test used to minimize self-heating effect
 - Guaranteed by design. Not subject to production testing

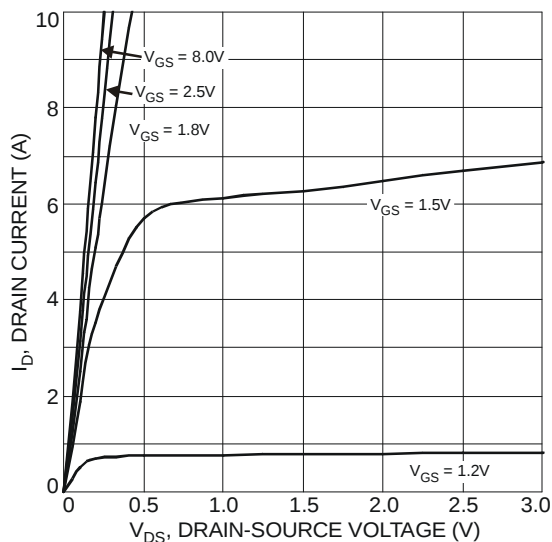


Fig. 1 Typical Output Characteristic

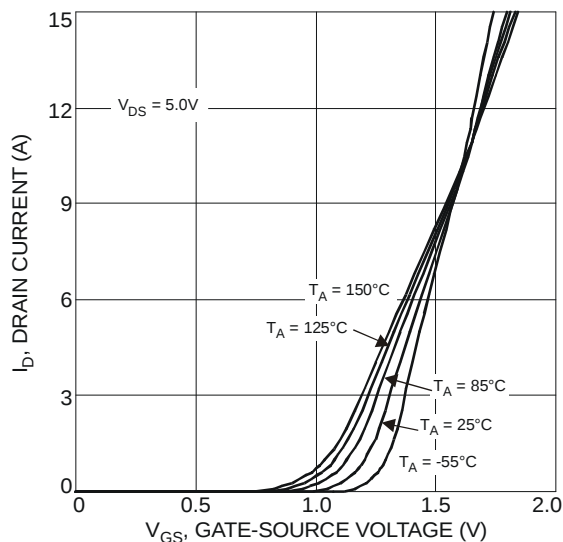


Fig. 2 Typical Transfer Characteristics

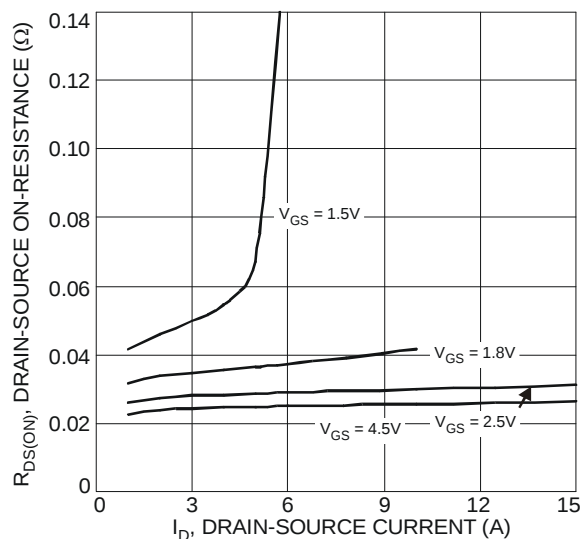


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

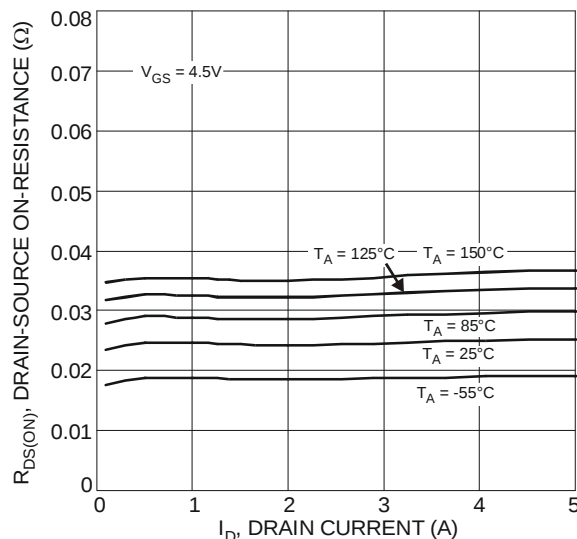


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

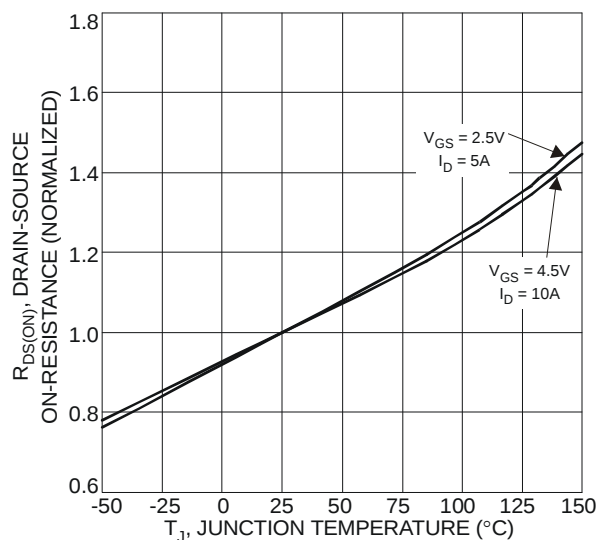


Fig. 5 On-Resistance Variation with Temperature

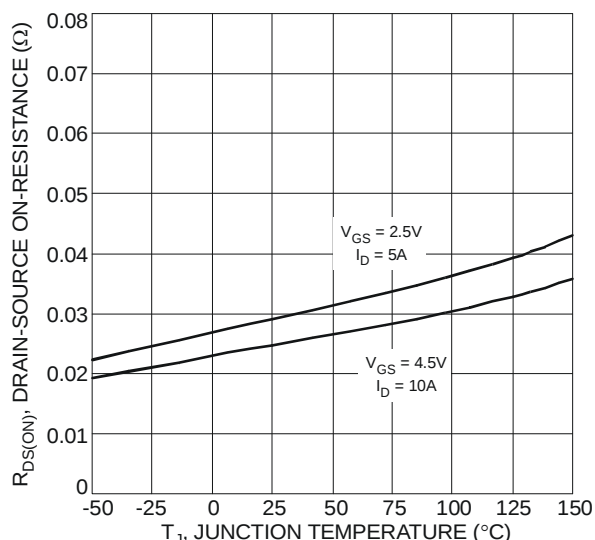


Fig. 6 On-Resistance Variation with Temperature

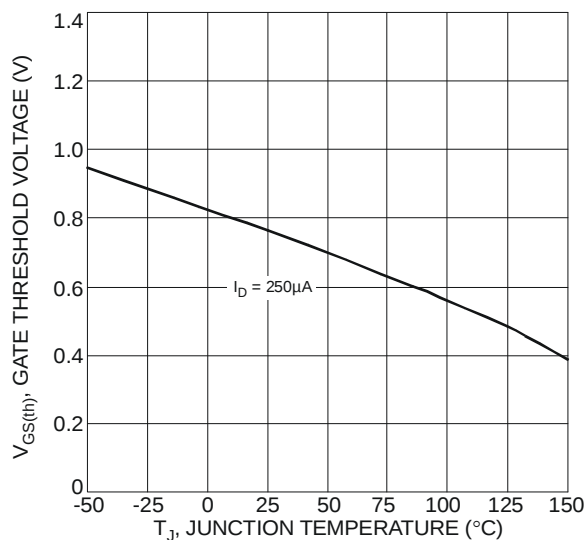


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

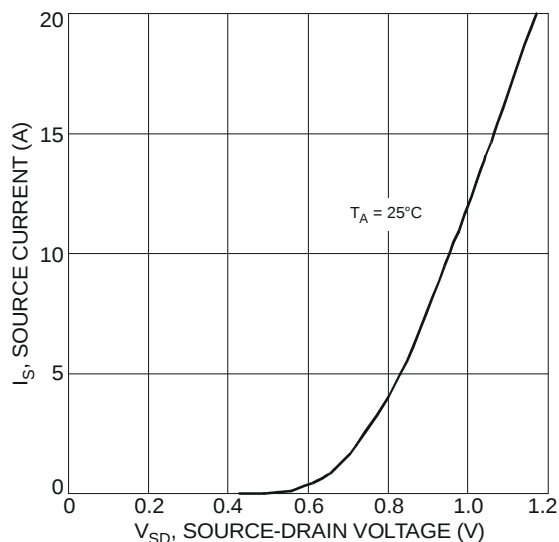


Fig. 8 Diode Forward Voltage vs. Current

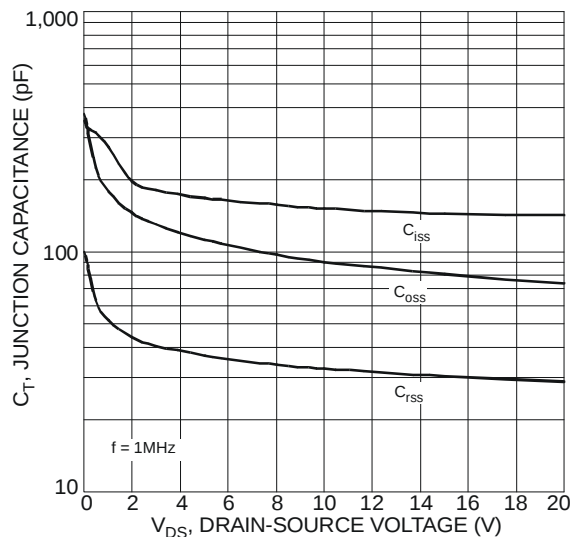


Fig. 9 Typical Junction Capacitance

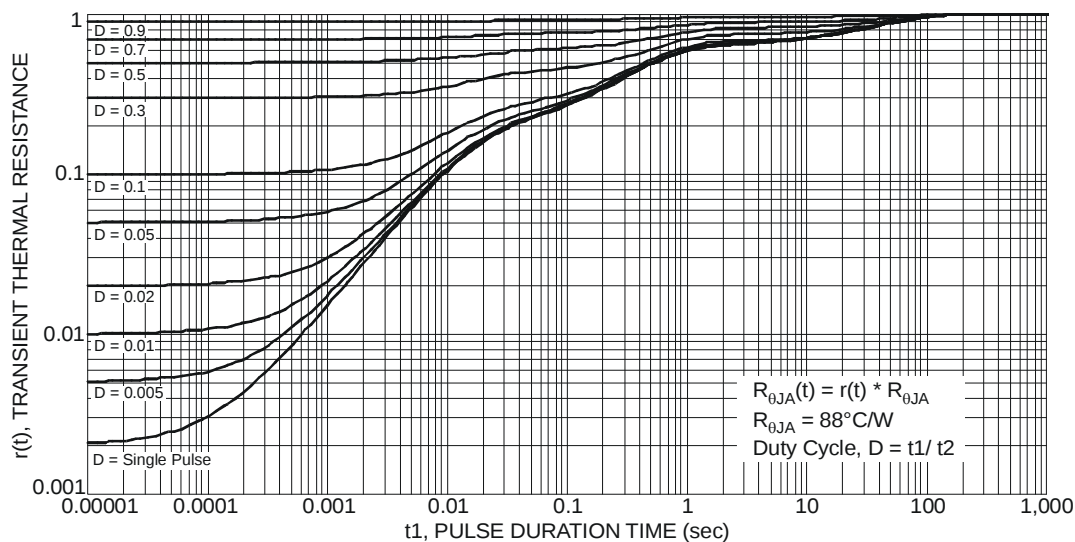
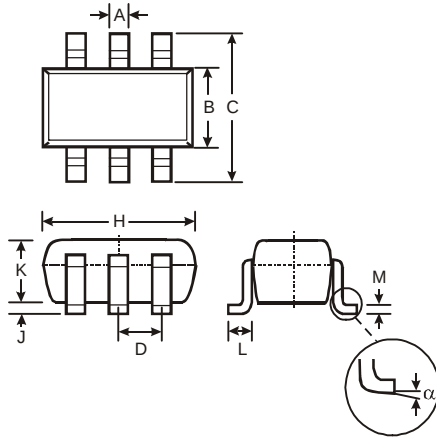


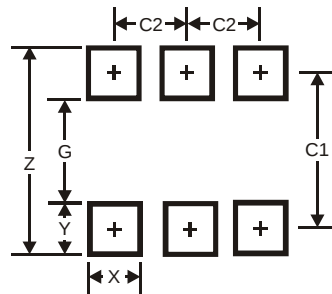
Fig. 10 Transient Thermal Resistance

Package Outline Dimensions



SOT26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	—
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

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