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)	T_A = +25°C T_A = +85°C	I_D	-0.9 -0.7	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Units
Total Power Dissipation (Note 5)		P_D	0.45	W
Total Power Dissipation (Note 6)			0.6	W
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	$R_{\theta JA}$	275	°C/W
Thermal Resistance, Junction to Ambient (Note 6)	Steady State		208	
Thermal Resistance, Junction to Case		$R_{\theta JC}$	72	
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} = -16V, V_{GS} = 0V
Gate-Body Leakage	I_{GSS}	—	—	±10	µA	V_{GS} = ±8V, V_{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	-0.4	—	-1.2	V	V_{DS} = V_{GS}, I_D = -250µA
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	—	180 240 320	260 500 1,000	mΩ	V_{GS} = -4.5V, I_D = -0.88A V_{GS} = -2.5V, I_D = -0.71A V_{GS} = -1.8V, I_D = -0.20A
Diode Forward Voltage	V_{SD}	—	-0.8	-1.2	V	V_{GS} = 0V, I_S = -0.48A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{iss}	—	184	—	pF	V_{DS} = -10V, V_{GS} = 0V f = 1.0MHz
Output Capacitance	C_{oss}	—	26.4	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	18.5	—	pF	
Gate Resistance	R_g	—	221	—	Ω	V_{DS} = V_{GS} = 0V,f = 1.0MHz
Total Gate Charge	Q_g	—	2.1	—	nC	V_{GS} = -4.5V, V_{DS} = -10V, I_D = -1.7A
Gate-Source Charge	Q_{gs}	—	0.4	—	nC	
Gate-Drain Charge	Q_{gd}	—	0.5	—	nC	
Turn-On Delay Time	$t_{D(ON)}$	—	9.8	—	ns	V_{DD} = -10V, I_D = -1.5A, V_{GS} = -4.5V, R_{GEN} = 1Ω
Turn-Off Delay Time	$t_{D(OFF)}$	—	24.4	—	ns	
Turn-On Rise Time	t_r	—	88	—	ns	
Turn-Off Fall Time	t_f	—	45	—	ns	

Notes:
5. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
6. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.
7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to product testing.

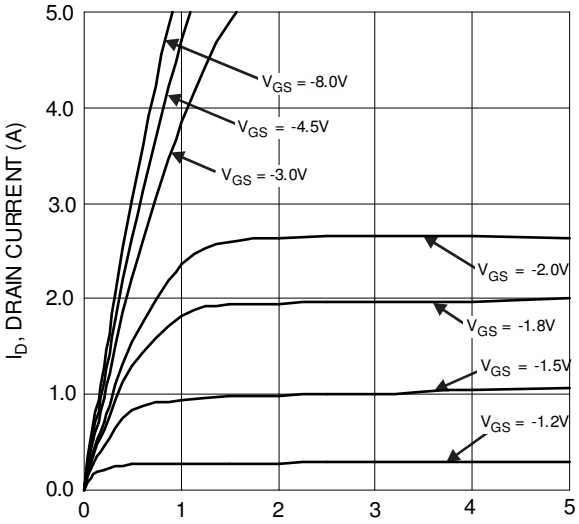


Figure 1 Typical Output Characteristic

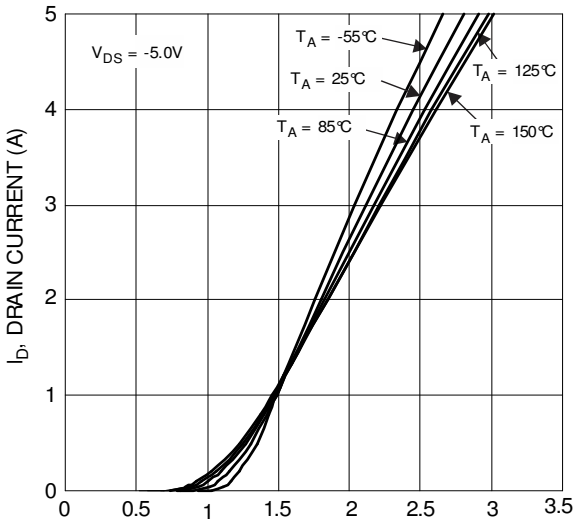


Figure 2 Typical Transfer Characteristics

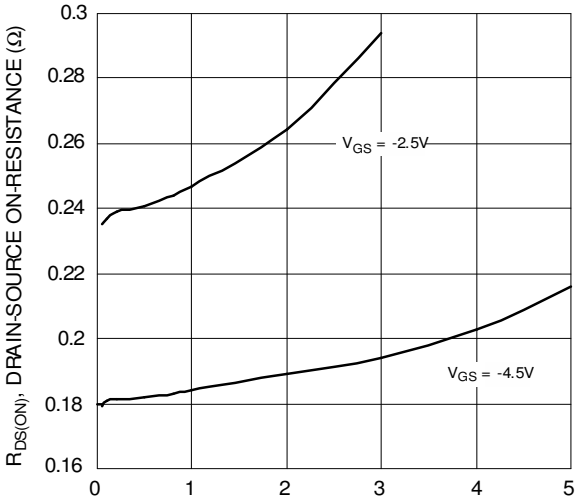


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

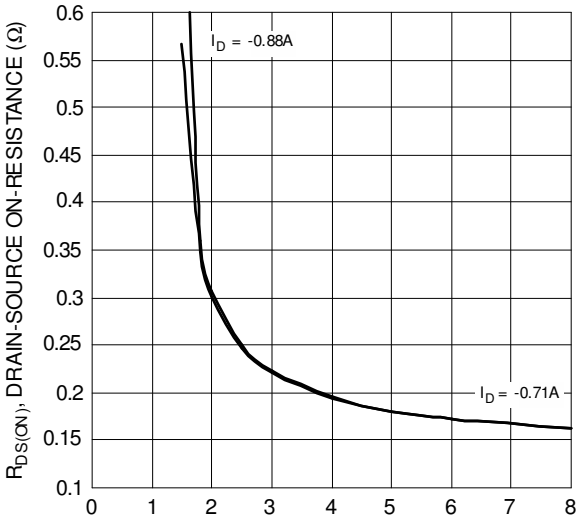


Figure 4 Typical Transfer Characteristics

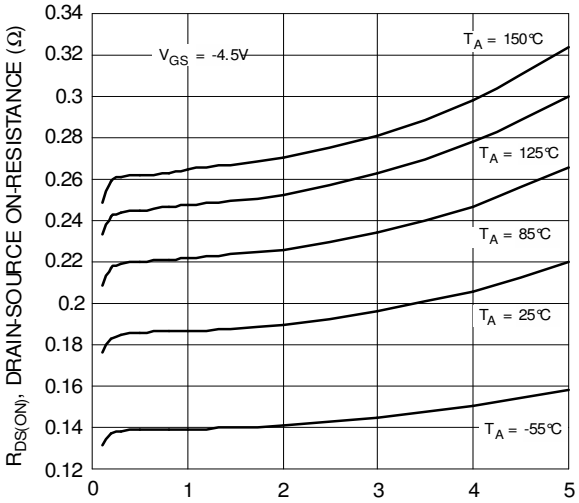


Figure 5 Typical On-Resistance vs. Drain Current and Temperature

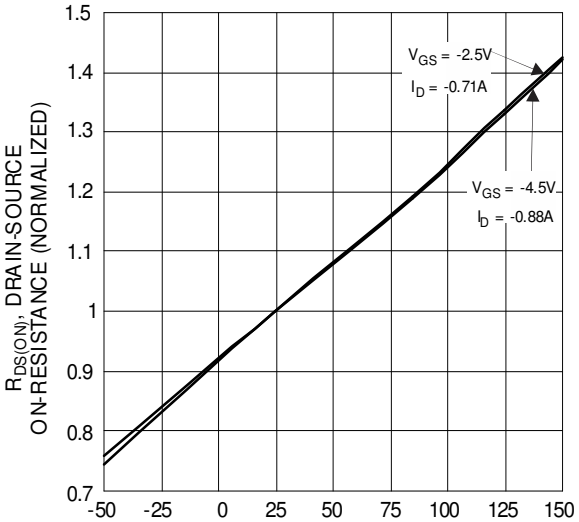


Figure 6 On-Resistance Variation with Temperature

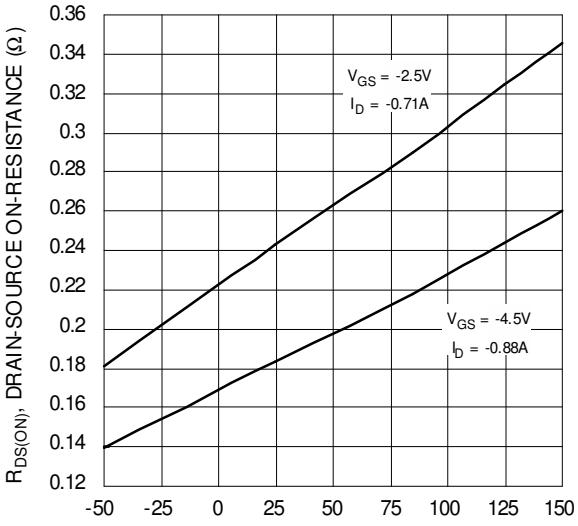


Figure 7 On-Resistance Variation with Temperature

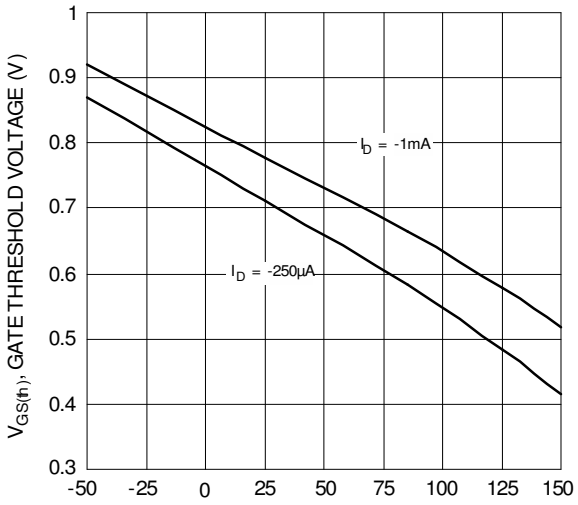


Figure 8 Gate Threshold Variation vs. Junction Temperature

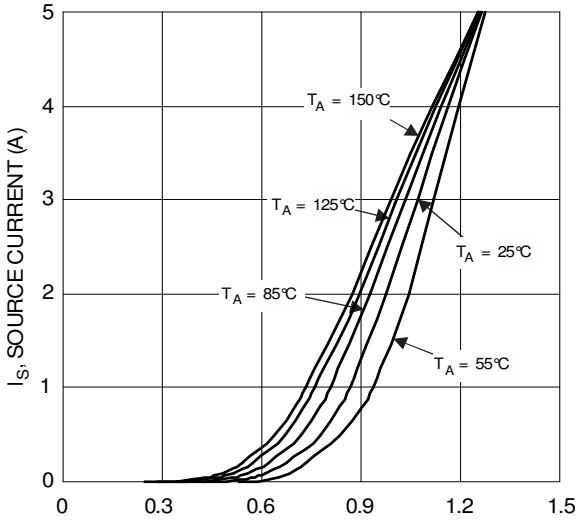


Figure 9 Diode Forward Voltage vs. Current

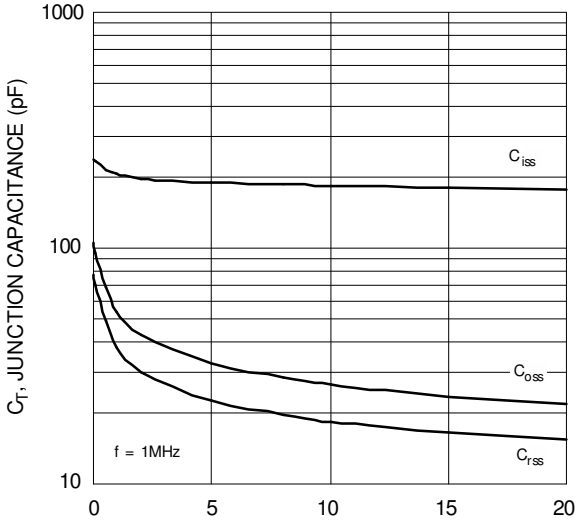


Figure 10 Typical Junction Capacitance

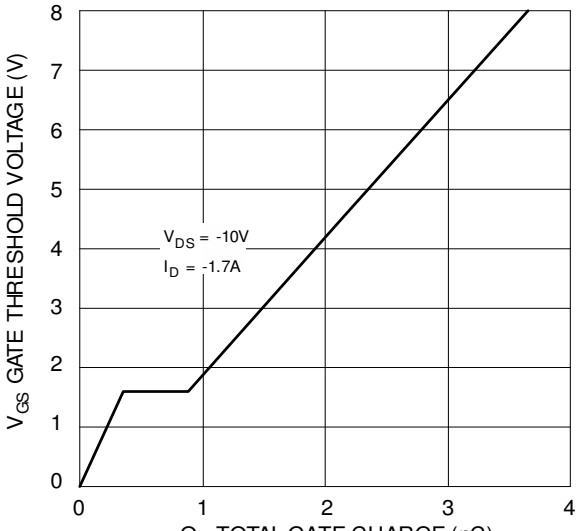


Figure 11 Gate Charge

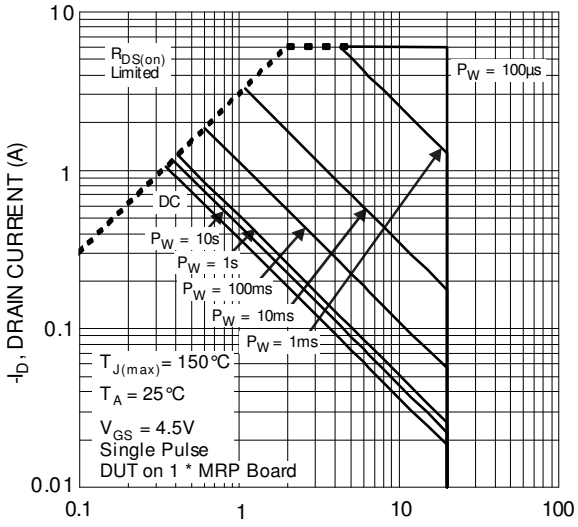


Figure 12 SOA, Safe Operation Area

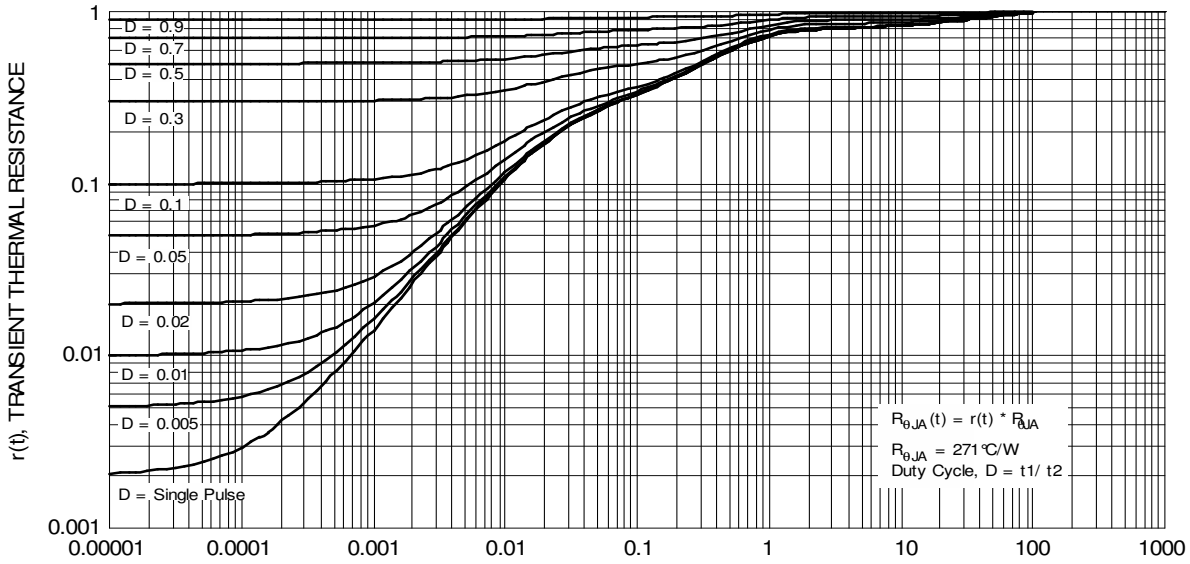
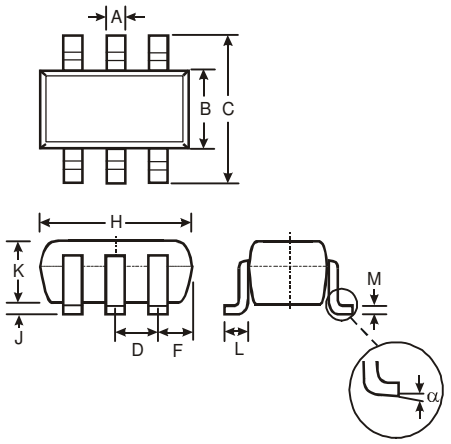


Figure 13 Transient Thermal Resistance

Package Outline Dimensions

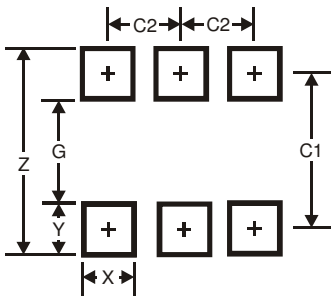
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



SOT363			
Dim	**Min**	**Max**	**Typ**
A	0.10	0.30	0.25
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	0.65 Typ		
F	0.40	0.45	0.425
H	1.80	2.20	2.15
J	0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.22	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C1	1.9
C2	0.65

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