Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic				Symbol	Value	Units
Drain-Source Voltage				V_{DSS}	60	V
Gate-Source Voltage				V_{GSS}	±20	V
Continuous Drain Current (Note 5)	V_{GS} = 10V	Steady State	T_A = +25°C T_A = +70°C	I_D	180 140	mA
Continuous Drain Current (Note 5)	V_{GS} = 5V	Steady State	T_A = +25°C T_A = +70°C	I_D	150 120	mA
Continuous Drain Current (Note 6)	V_{GS} = 10V	Steady State	T_A = +25°C T_A = +70°C	I_D	200 160	mA
Continuous Drain Current (Note 6)	V_{GS} = 5V	Steady State	T_A = +25°C T_A = +70°C	I_D	170 140	mA
Maximum Continuous Body Diode Forward Current (Note 6)				I_S	0.5	A
Pulsed Drain Current (10µs pulse, duty cycle = 1%)				I_{DM}	700	mA

Thermal Characteristics

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 5)	P_D	300	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	435	°C/W
Total Power Dissipation (Note 6)	P_D	400	mW
Thermal Resistance, Junction to Ambient (Note 6)	$R_{\theta JA}$	316	°C/W
Thermal Resistance, Junction to Case (Note 6)	$R_{\theta JC}$	139	°C/W
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}	60	—	—	V	V_{GS} = 0V, I_D = 250µA
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1.0	µA	V_{DS} = 60V, V_{GS} = 0V
Gate-Body Leakage	I_{GSS}	—	—	±10	µA	V_{GS} = ±20V, V_{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	0.8	—	2.5	V	V_{DS} = V_{GS}, I_D = 250µA
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	—	6	Ω	V_{GS} = 10V, I_D = 0.5A
		—	—	8	Ω	V_{GS} = 5V, I_D = 0.05A
Forward Transconductance	g_{FS}	80	—	—	mS	V_{DS} = 10V, I_D = 0.115A
Diode Forward Voltage	V_{SD}	—	0.8	1.2	V	V_{GS} = 0V, I_S = 115mA
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{iss}	—	56	—	pF	V_{DS} = 25V, V_{GS} = 0V, f = 1.0MHz
Output Capacitance	C_{oss}	—	4.4	—		
Reverse Transfer Capacitance	C_{rss}	—	3.1	—		
Gate Resistance	R_G	—	88	—	Ω	V_{DS} = 0V, V_{GS} = 0V, f = 1.0MHz
Total Gate Charge V_{GS} = 10V	Q_g	—	1.4	—	nC	V_{GS} = 4.5V, V_{DS} = 10V, I_D = 250mA
Total Gate Charge V_{GS} = 4.5V	Q_g	—	0.6	—		
Gate-Source Charge	Q_{gs}	—	0.2	—		
Gate-Drain Charge	Q_{gd}	—	0.1	—		
Turn-On Delay Time	$t_{D(on)}$	—	3.0	—	nS	V_{DD} = 30V, V_{GS} = 10V, R_G = 25Ω, I_D = 200mA
Turn-On Rise Time	t_r	—	2.8	—		
Turn-Off Delay Time	$t_{D(off)}$	—	17.4	—		
Turn-Off Fall Time	t_f	—	8.1	—		

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

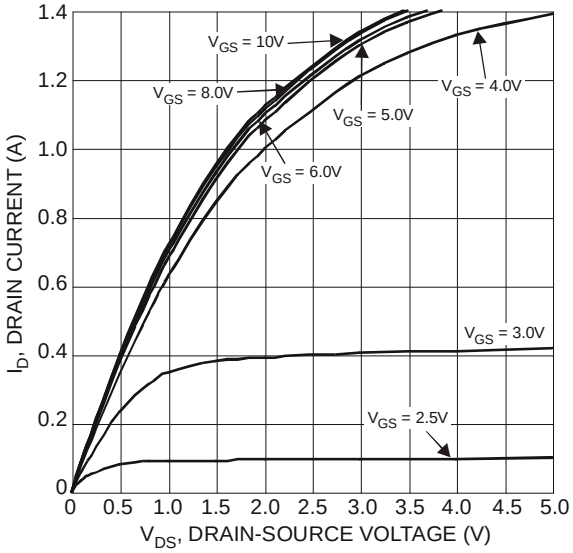


Figure 1 Typical Output Characteristics

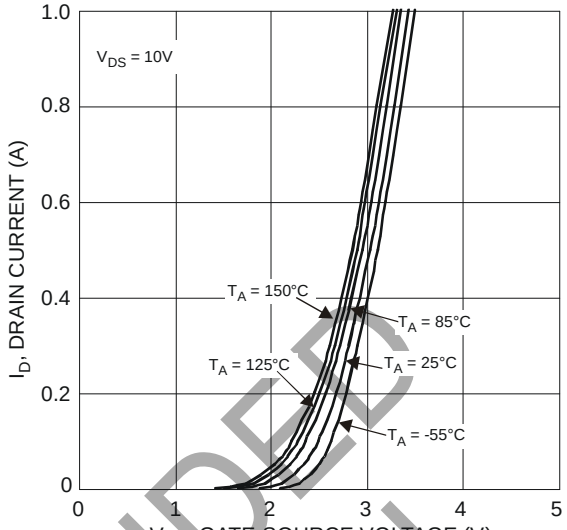


Figure 2 Typical Transfer Characteristics

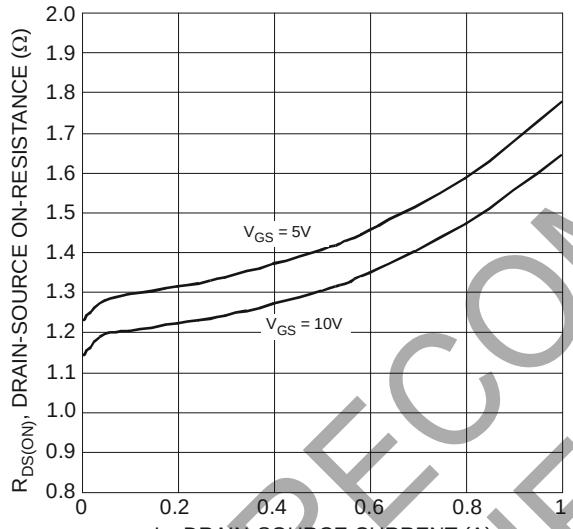


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

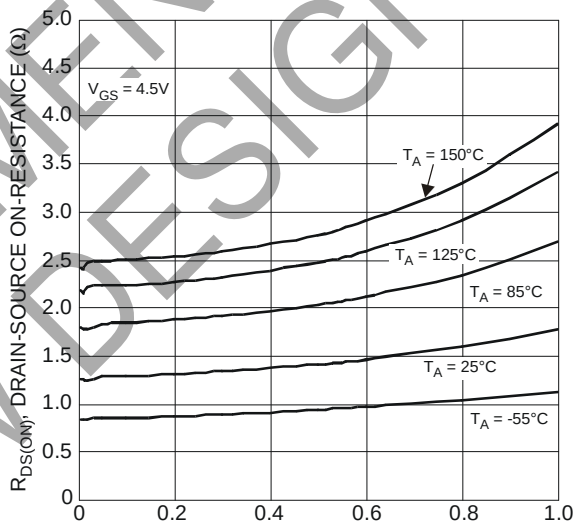


Figure 4 Typical On-Resistance vs. Drain Current and Temperature

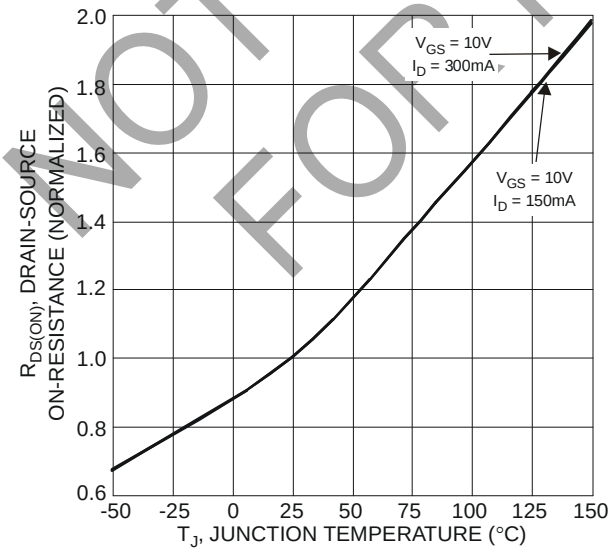


Figure 5 On-Resistance Variation with Temperature

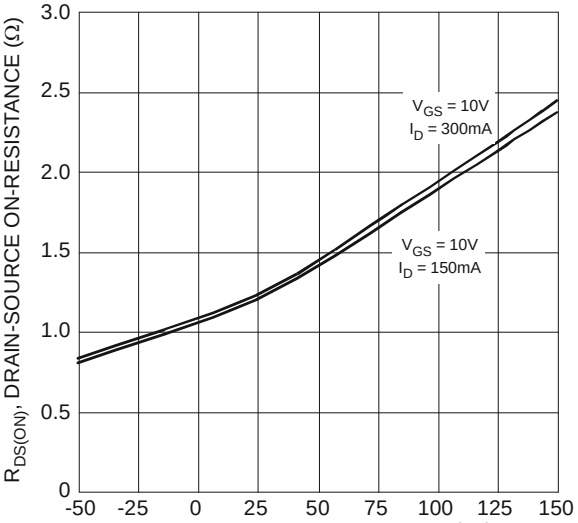


Figure 6 On-Resistance Variation with Temperature

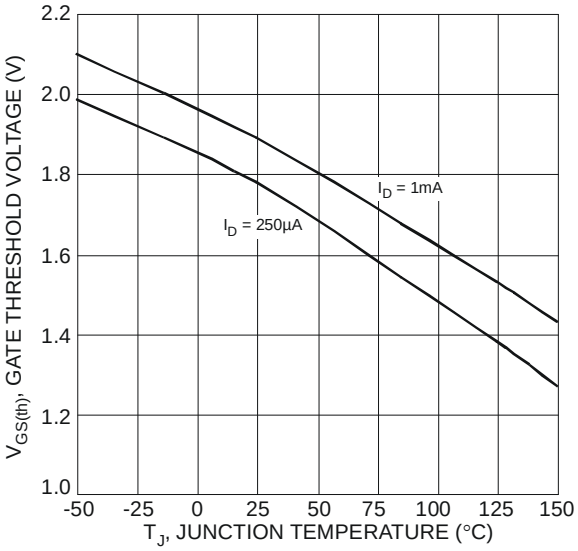


Figure 7 Gate Threshold Variation vs. Ambient Temperature

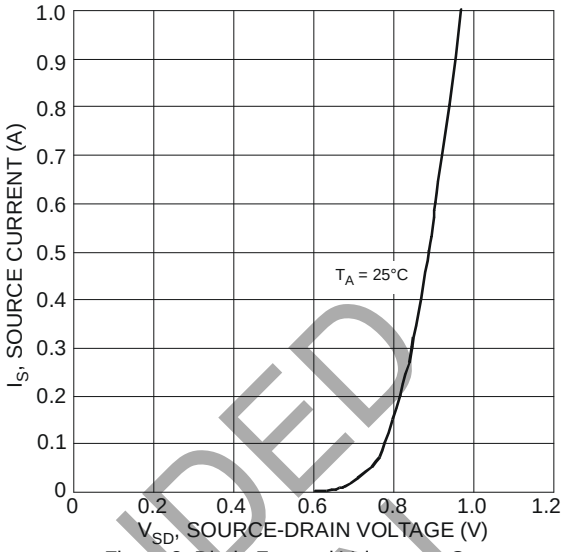


Figure 8 Diode Forward Voltage vs. Current

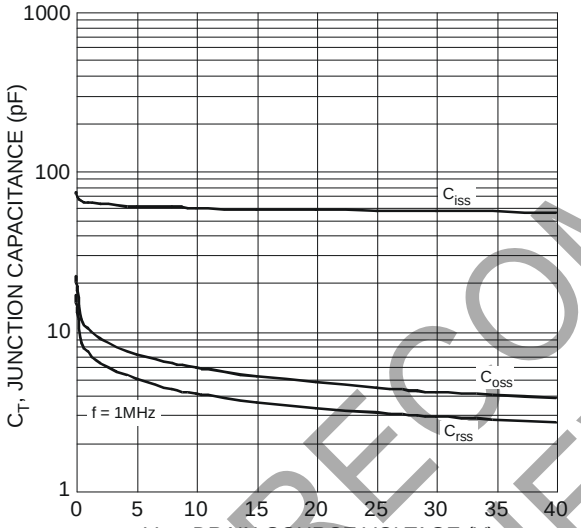


Figure 9 Typical Junction Capacitance

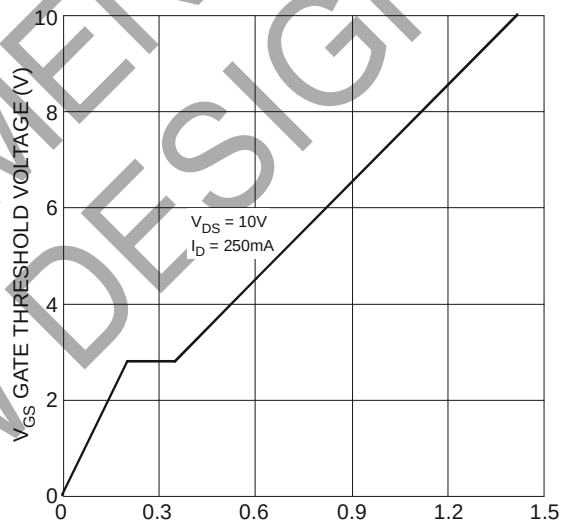
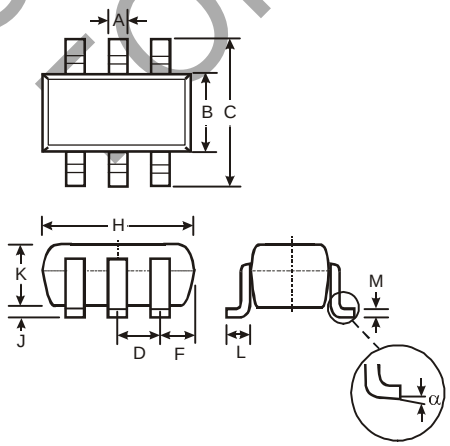


Figure 10 Gate Charge

Package Outline Dimensions

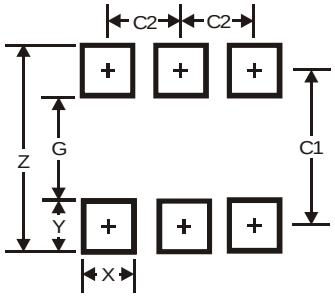
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



SOT363		
Dim	**Min**	**Max**
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Typ	
F	0.40	0.45
H	1.80	2.20
J	0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.22
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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