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

Characteristic		Symbol	Value	Unit
Drain Source Voltage		V_{DSS}	50	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current (Note 5)	Continuous Pulsed (Note 6)	I_D	300 800	mA

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

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P_D	250	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 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}	50	—	—	V	V_{GS} = 0V, I_D = 10μA
Zero Gate Voltage Drain Current	@T_C = +25°C	I_{DSS}	—	—	60	nA	V_{DS} = 50V, V_{GS} = 0V
Gate-Body Leakage		I_{GSS}	—	—	1 500 50	μA nA nA	V_{GS} = ±12V, V_{DS} = 0V V_{GS} = ±10V, V_{DS} = 0V V_{GS} = ±5V, V_{DS} = 0V
ON CHARACTERISTICS (Note 7)							
Gate Threshold Voltage		$V_{GS(th)}$	0.49	—	1.0	V	V_{DS} = V_{GS}, I_D = 250μA
Static Drain-Source On-Resistance		$R_{DS\ (ON)}$	— — —	— — —	3.0 2.5 2.0	Ω	V_{GS} = 1.8V, I_D = 50mA V_{GS} = 2.5V, I_D = 50mA V_{GS} = 5.0V, I_D = 50mA
On-State Drain Current		$I_{D(ON)}$	0.5	1.4	—	A	V_{GS} = 10V, V_{DS} = 7.5V
Forward Transconductance		$\|Y_{fs}\|$	200	—	—	mS	V_{DS} =10V, I_D = 0.2A
Source-Drain Diode Forward Voltage		V_{SD}	0.5	—	1.4	V	V_{GS} = 0V, I_S = 115mA
DYNAMIC CHARACTERISTICS (Note 8)							
Input Capacitance		C_{iss}	—	—	50	pF	V_{DS} = 25V, V_{GS} = 0V f = 1.0MHz
Output Capacitance		C_{oss}	—	—	25	pF	
Reverse Transfer Capacitance		C_{rss}	—	—	5.0	pF	
Turn-On Delay Time		$t_{D(on)}$	—	2.1	—	ns	V_{DD} = 30V, V_{GS} = 10V, R_G = 25Ω, I_D = 200mA
Turn-On Rise Time		t_r	—	1.8	—	ns	
Turn-Off Delay Time		$t_{D(off)}$	—	14.4	—	ns	
Turn-Off Fall Time		t_f	—	8.4	—	ns	

Notes:
5. Device mounted on FR-4 PCB.
6. Pulse width ≤10μS, Duty Cycle ≤1%.
7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to production testing.

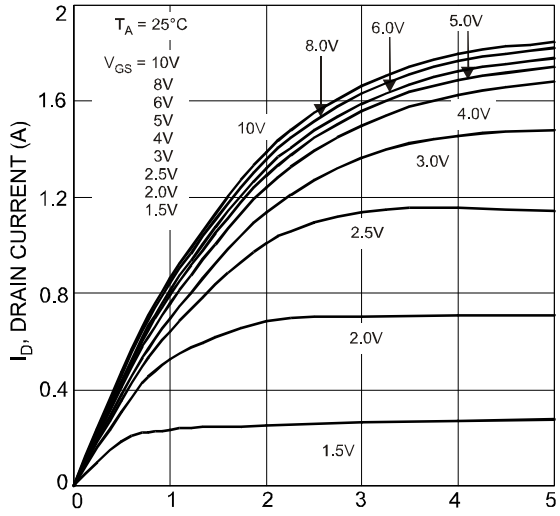


Fig. 1 Typical Output Characteristics

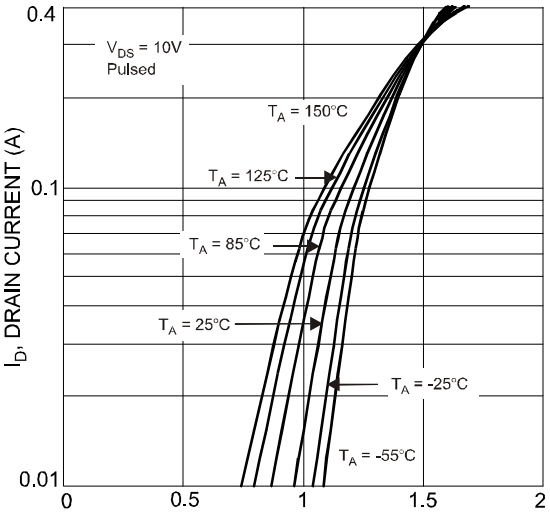


Fig. 2 Typical Transfer Characteristics

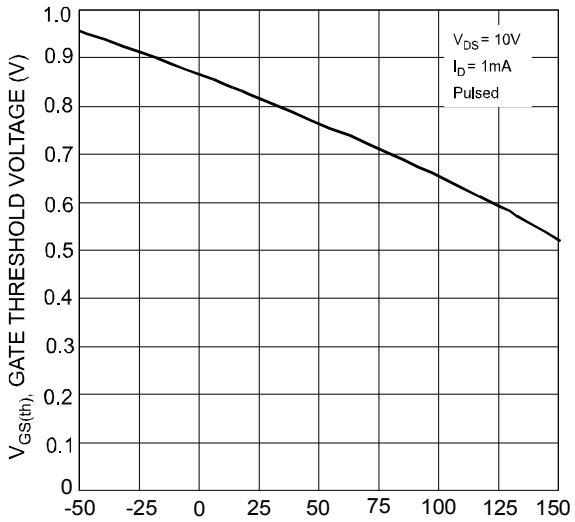


Fig. 3 Gate Threshold Voltage vs. Channel Temperature

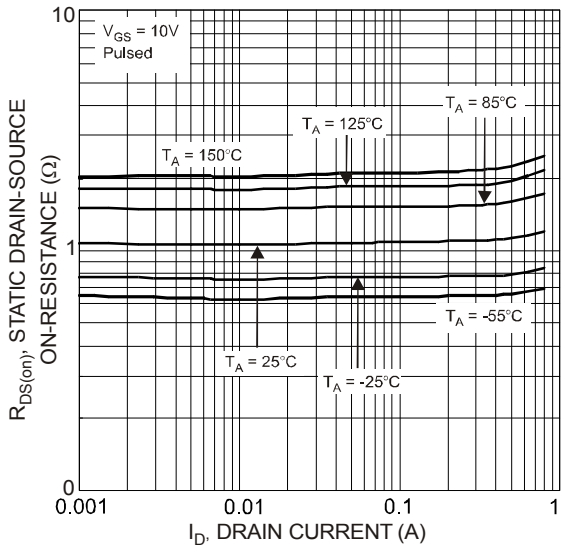


Fig. 4 Static Drain-Source On-Resistance vs. Drain Current

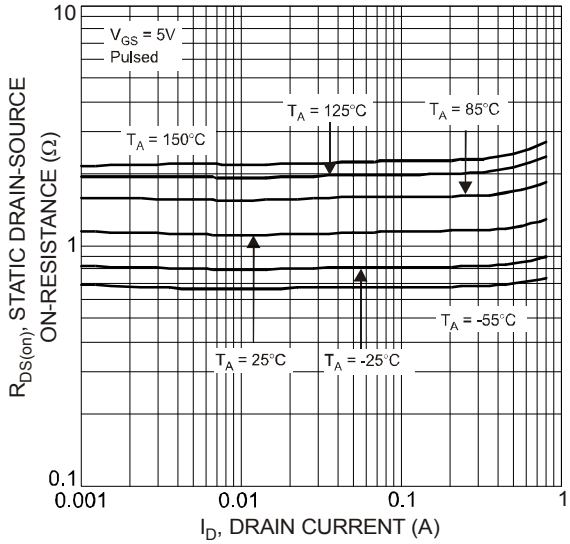


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

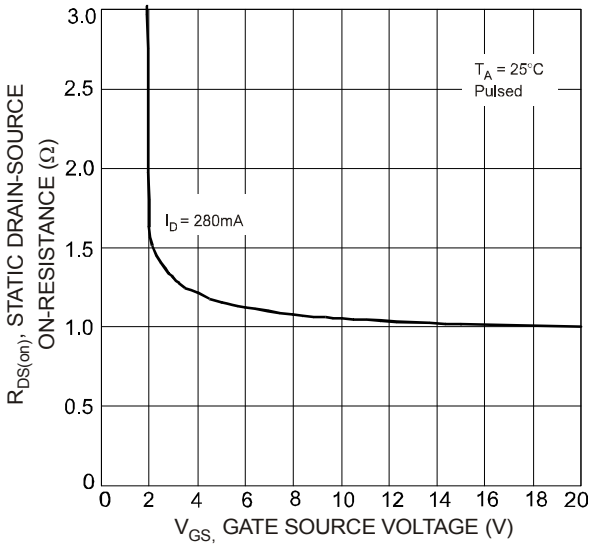


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage

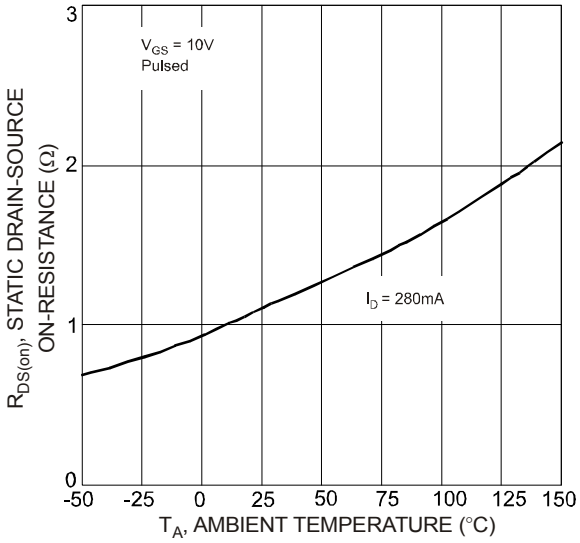


Fig. 7 Static Drain-Source On-State Resistance vs. Ambient Temperature

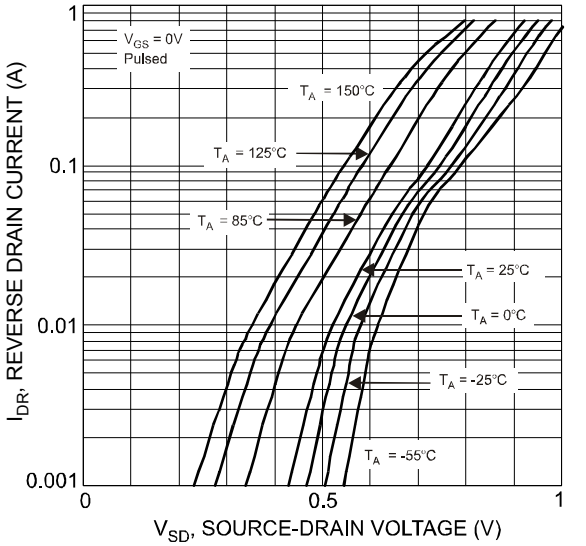


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

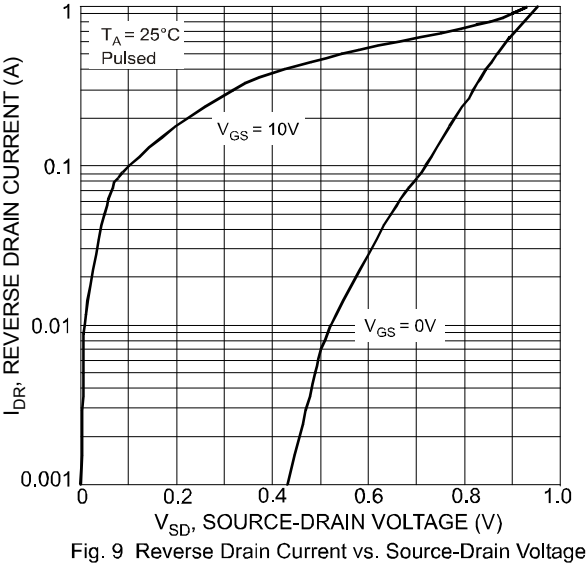


Fig. 9 Reverse Drain Current vs. Source-Drain Voltage

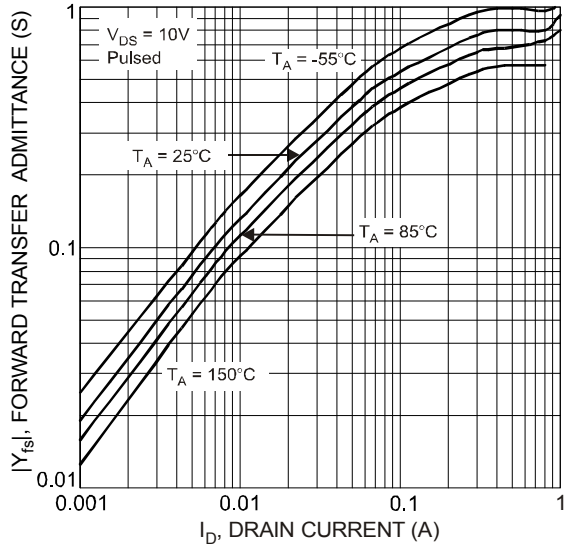


Fig.10 Forward Transfer Admittance vs. Drain Current

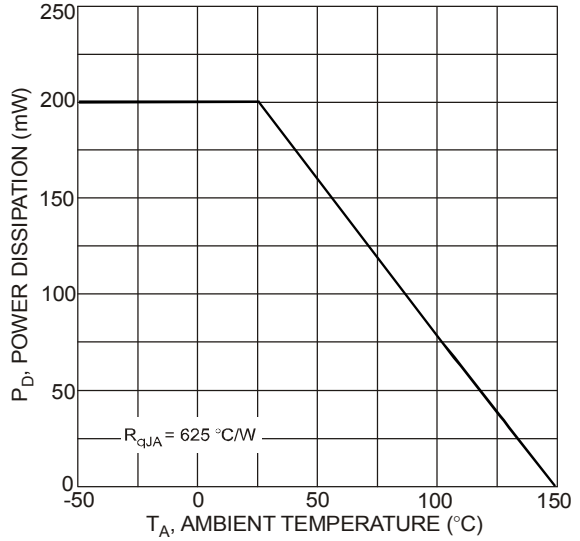
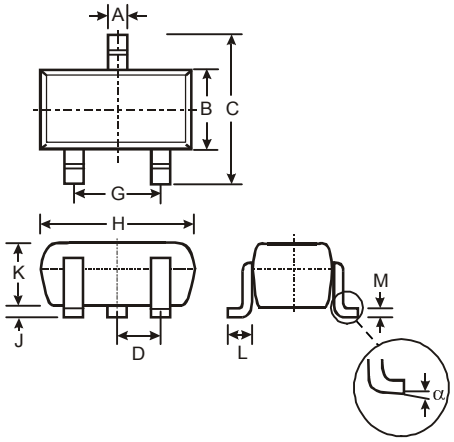


Fig. 11 Derating Curve - Total

Package Outline Dimensions

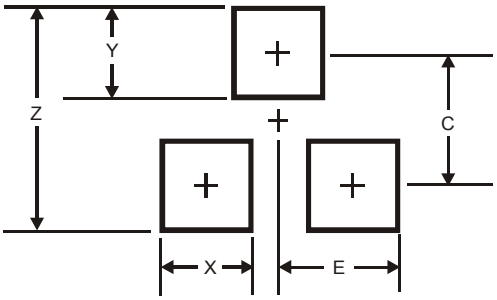
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



SOT-323			
Dim	**Min**	**Max**	**Typ**
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	0.95
L	0.25	0.40	0.30
M	0.10	0.18	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	2.8
X	0.7
Y	0.9
C	1.9
E	1.0

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