

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

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V _{DSS}	60	V
Gate-Source Voltage			V _{GSS}	±20	V
Continuous Drain Current (Note 6) V _{GS} = 10V	Steady State	T _A = +25°C T _A = +70°C	I _D	380 300	mA
	t<5s	T _A = +25°C T _A = +70°C	I _D	430 340	mA
Maximum Continuous Body Diode Forward Current (Note 6)			I _S	0.5	A
Pulsed Drain Current (10μs Pulse, Duty Cycle = 1%) (Note 6)			I _{DM}	1.2	A

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

Characteristic		Symbol	Value	Unit
Total Power Dissipation (Note 5)		P _D	310	mW
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	R _{θJA}	411	°C/W
	t < 5s		371	
Total Power Dissipation (Note 6)		P _D	410	mW
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	R _{θJA}	311	°C/W
	t < 5s		257	
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 = 10µA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1.0	µA	V _{DS} = 60V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±10	µA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V _{GS(TH)}	1.0	1.6	2.5	V	V _{DS} = 10V, I _D = 1mA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	—	2.0	Ω	V _{GS} = 10V, I _D = 0.5A
				3.0		V _{GS} = 5V, I _D = 0.05A
Forward Transfer Admittance	Y _{fs}	80	—	—	mS	V _{DS} = 10V, I _D = 0.2A
Diode Forward Voltage	V _{SD}	—	0.75	1.1	V	V _{GS} = 0V, I _S = 115mA
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iss}	—	30	—	pF	V _{DS} = 25V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	4.2	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	2.9	—	pF	
Gate Resistance	R _g	—	133	—	Ω	f = 1MHz, V _{GS} = 0V, V _{DS} = 0V
Total Gate Charge	Q _g	—	304	—	pC	V _{GS} = 4.5V, V _{DS} = 10V, I _D = 250mA
Gate-Source Charge	Q _{gs}	—	203	—	pC	
Gate-Drain Charge	Q _{gd}	—	84	—	pC	
Turn-On Delay Time	t _{D(ON)}	—	3.9	—	ns	V _{DD} = 30V, V _{GS} = 10V, R _G = 25Ω, I _D = 200mA
Turn-On Rise Time	t _R	—	3.4	—	ns	
Turn-Off Delay Time	t _{D(OFF)}	—	15.7	—	ns	
Turn-Off Fall Time	t _F	—	9.9	—	ns	

- Notes:
- Device mounted on FR-4 PCB, with minimum recommended pad layout.
 - Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.
 - Short duration pulse test used to minimize self-heating effect.
 - Guaranteed by design. Not subject to product testing.

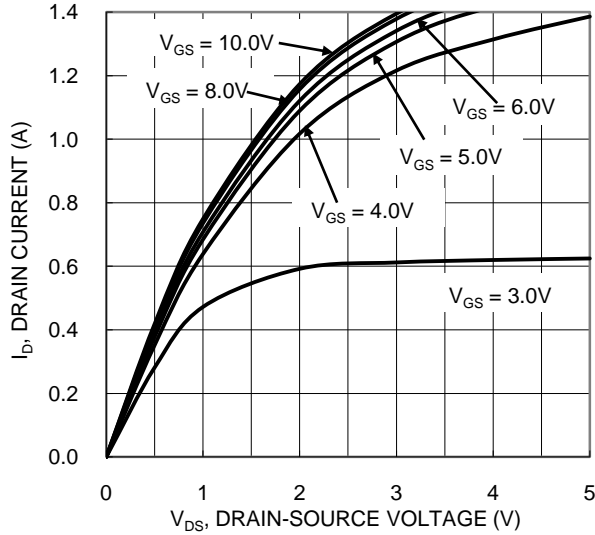


Figure 1. Typical Output Characteristic

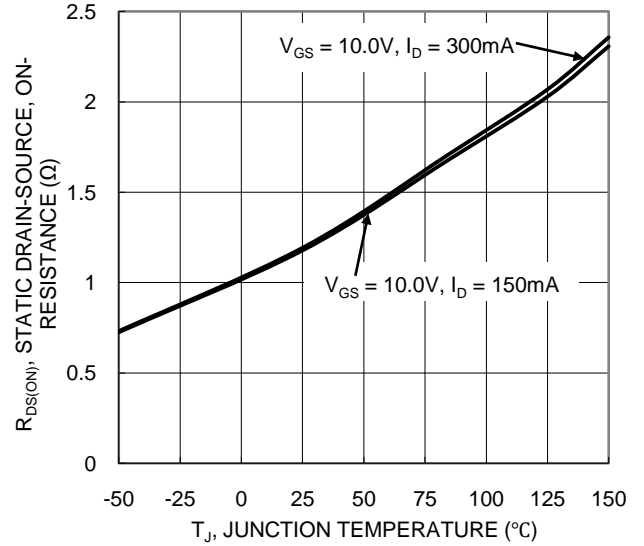


Figure 2. On-Resistance Variation with Temperature

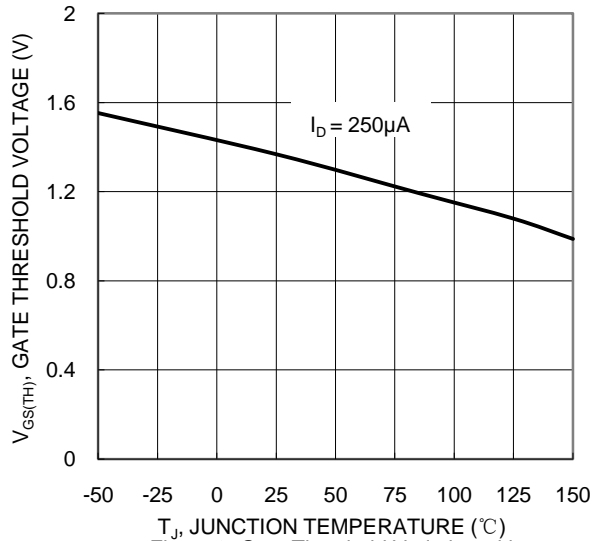


Figure 3. Gate Threshold Variation with Temperature

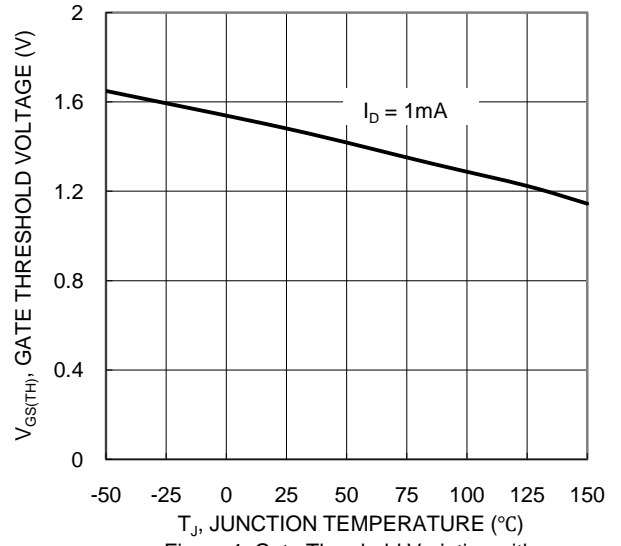


Figure 4. Gate Threshold Variation with Temperature

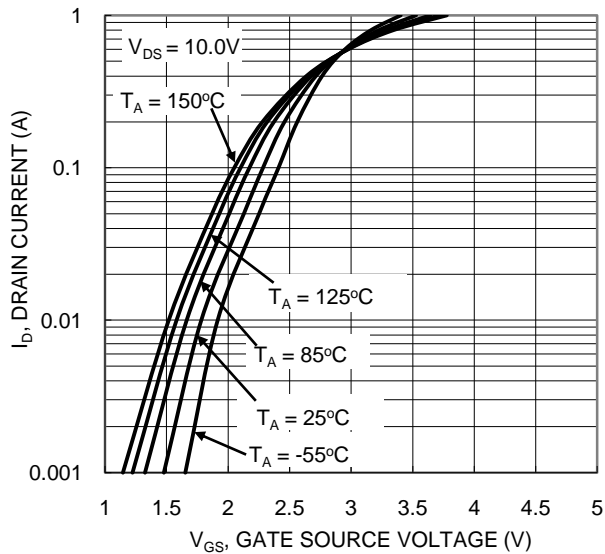


Figure 5. Typical Transfer Characteristics

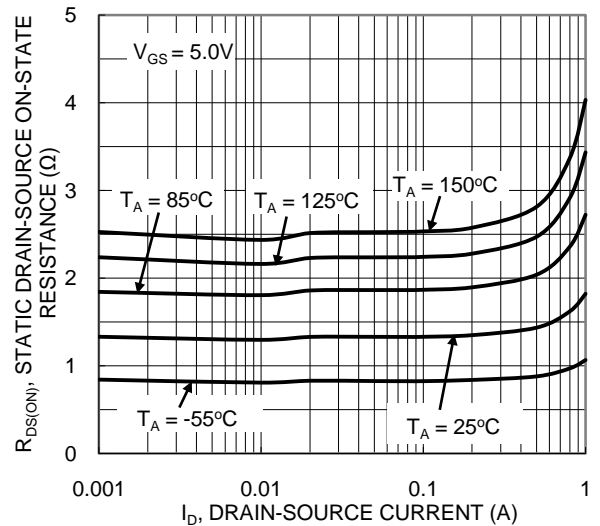


Figure 6. Static Drain-Source On-Resistance vs. Drain Current

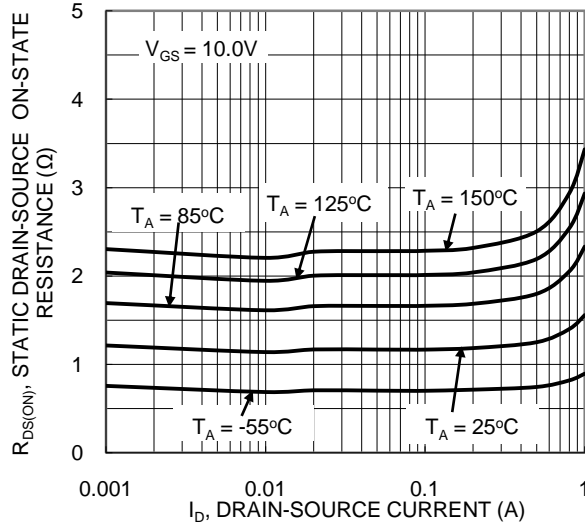


Figure 7. Static Drain-Source On-Resistance vs. Drain Current

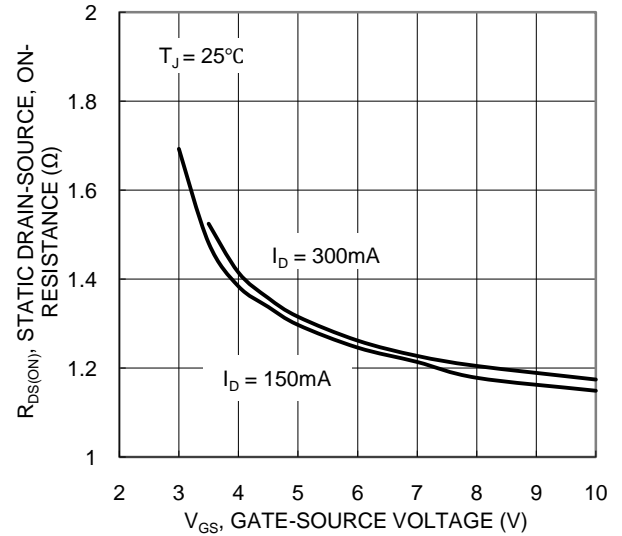


Figure 8. Static Drain-Source On-Resistance vs. Gate-Source Voltage

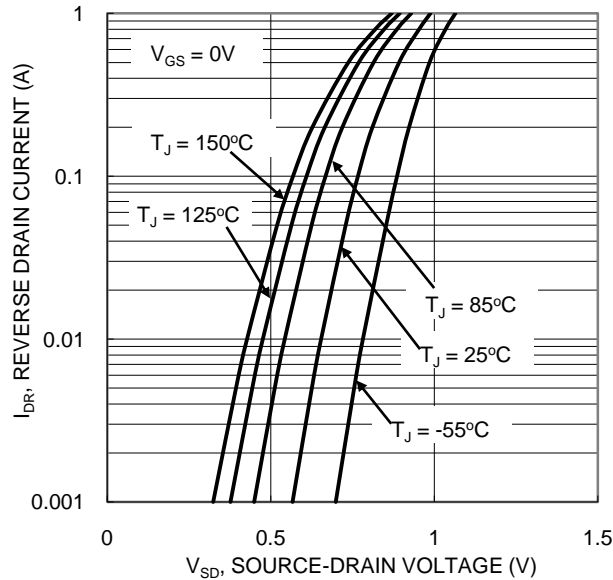


Figure 9. Reverse Drain Current

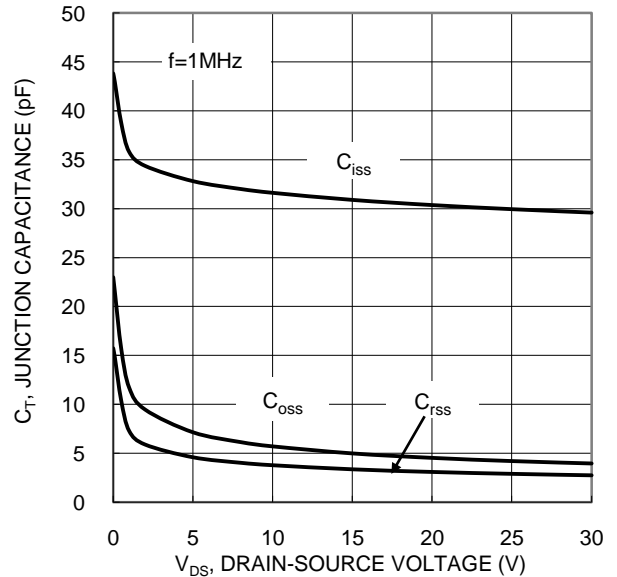


Figure 10. Typical Junction Capacitance

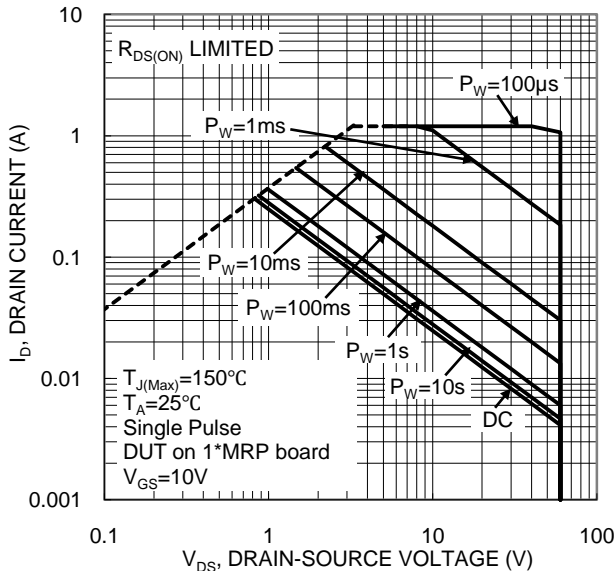
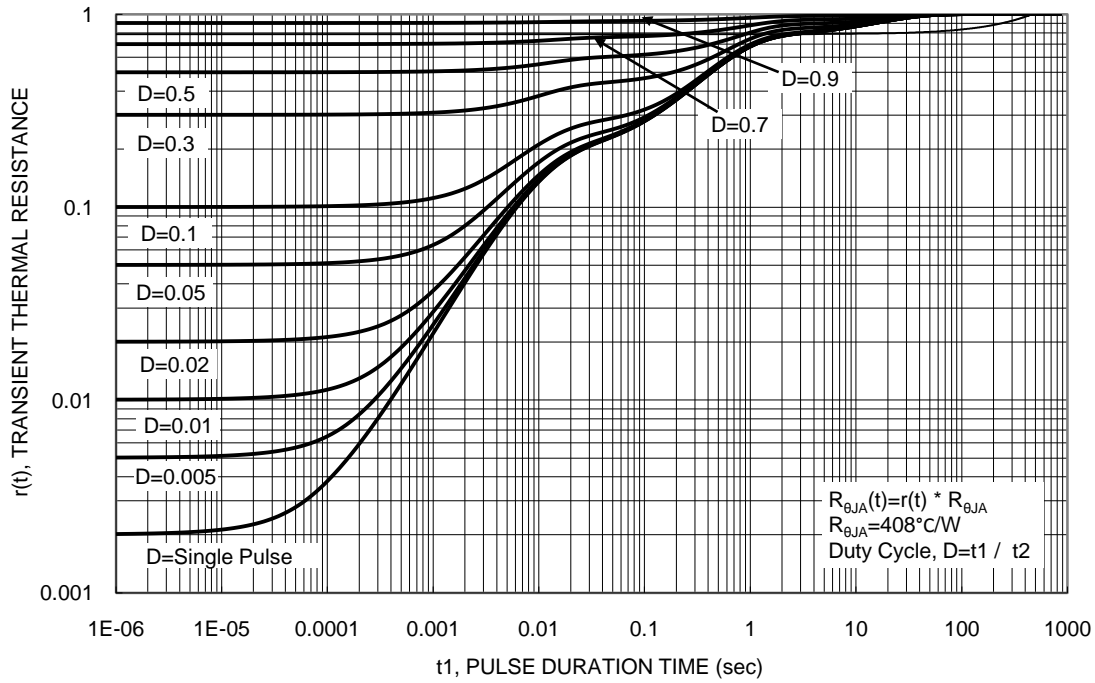
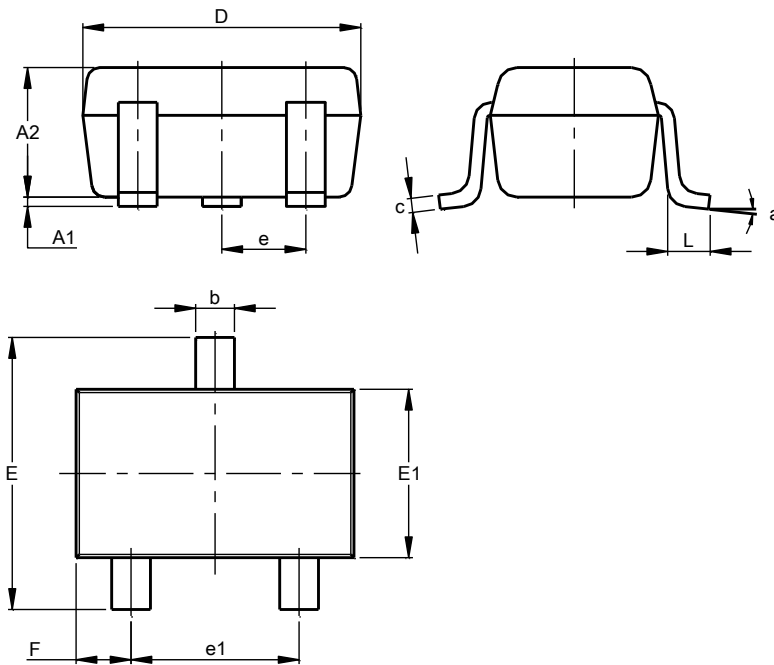


Figure 11. SOA, Safe Operation Area



Package Outline Dimensions

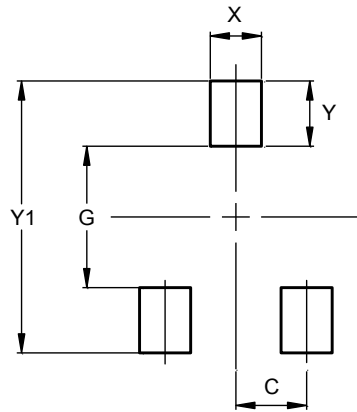
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	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)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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