

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

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V _{DSS}	20	V
Gate-Source Voltage			V _{GSS}	±12	V
Continuous Drain Current (Note 5)	Steady State	T _A = +25°C	I _D	1.33	A
		T _A = +85°C		0.84	
Pulsed Drain Current			I _{DM}	3	A

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

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P _D	530	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	233.8	°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 6)						
Drain-Source Breakdown Voltage	BV _{DSS}	20	—	—	V	V _{GS} = 0V, I _D = 250μA
Zero Gate Voltage Drain Current T _J = +25°C	I _{DSS}	—	—	100	nA	V _{DS} = 20V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±1.0	μA	V _{GS} = ±4.5V, V _{DS} = 0V
		—	—	±50		V _{GS} = ±10V, V _{DS} = 0V
ON CHARACTERISTICS (Note 6)						
Gate Threshold Voltage	V _{GS(TH)}	0.5	—	0.9	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	0.3	0.48	Ω	V _{GS} = 5.0V, I _D = 200mA
		—	0.35	0.5		V _{GS} = 4.5V, I _D = 600mA
		—	0.45	0.7		V _{GS} = 2.5V, I _D = 500mA
		—	0.55	0.9		V _{GS} = 1.8V, I _D = 350mA
		—	0.65	1.5		V _{GS} = 1.5V, I _D = 50mA
Forward Transfer Admittance	Y _{fs}	—	1.4	—	S	V _{DS} = 10V, I _D = 400mA
Diode Forward Voltage (Note 6)	V _{SD}	—	0.7	1.2	V	V _{GS} = 0V, I _S = 150mA, f = 1.0MHz
DYNAMIC CHARACTERISTICS (Note 7)						
Input Capacitance	C _{iss}	—	36.0	—	pF	V _{DS} =16V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{oss}	—	5.7	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	4.2	—	pF	
Gate Resistance	R _g	—	68	—	Ω	V _{DS} = 0V, V _{GS} = 0V
Total Gate Charge	Q _g	—	0.5	—	nC	V _{GS} =4.5V, V _{DS} = 10V, I _D =250mA
Gate-Source Charge	Q _{gs}	—	0.07	—	nC	
Gate-Drain Charge	Q _{gd}	—	0.1	—	nC	
Turn-On Delay Time	t _{D(ON)}	—	4.06	—	ns	V _{DD} = 10V, V _{GS} = 4.5V, R _L = 47Ω, R _G = 10Ω, I _D = 200mA
Turn-On Rise Time	t _R	—	7.28	—	ns	
Turn-Off Delay Time	t _{D(OFF)}	—	13.74	—	ns	
Turn-Off Fall Time	t _F	—	10.54	—	ns	

- Notes:
- Device soldered onto FR-4 PCB, minimum recommended soldering pad dimensions (25.4mm x 25.4mm x 1.6mm, 2oz Cu pad: 0.18mm² x 6).
 - Short duration pulse test used to minimize self-heating effect.
 - Guaranteed by design. Not subject to product testing.

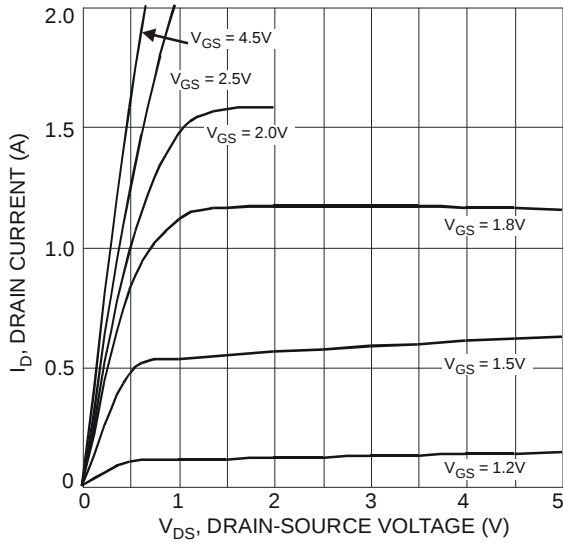


Fig. 1 Typical Output Characteristics

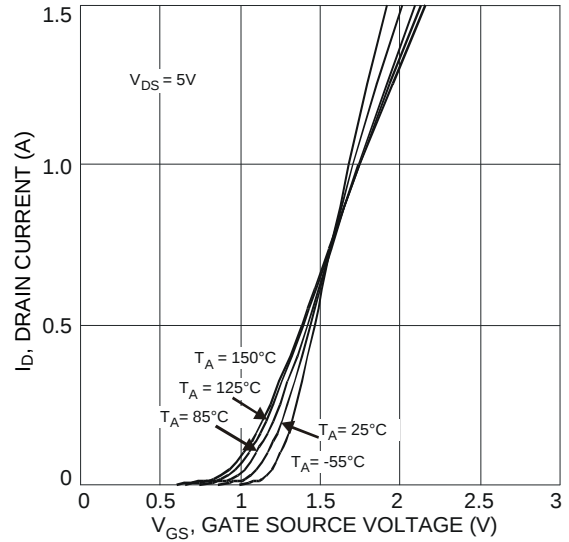


Fig. 2 Typical Transfer Characteristics

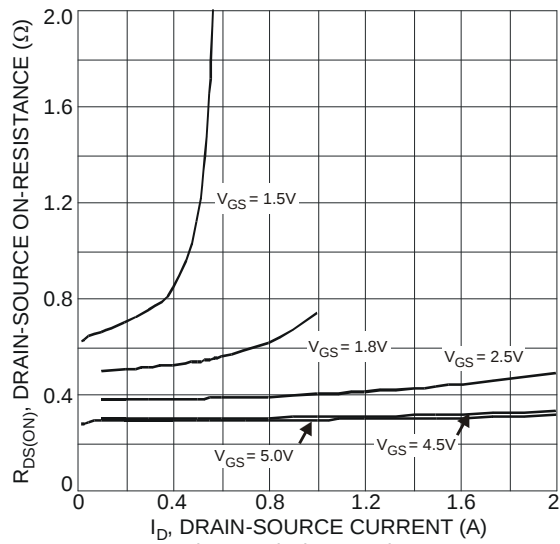


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

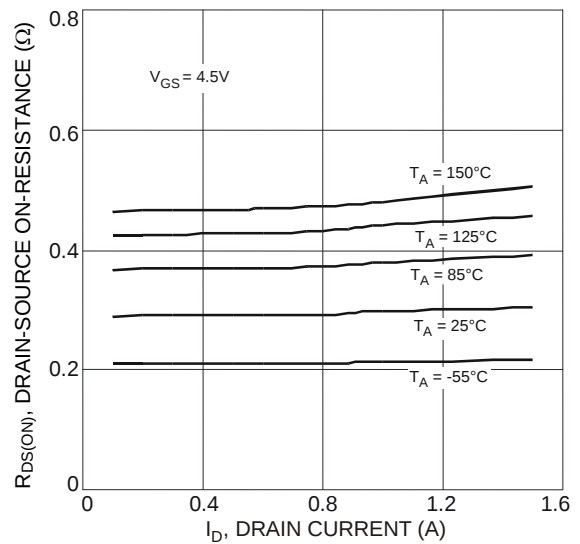


Fig. 4 Typical Drain-Source On-Resistance vs. Drain Current and Temperature

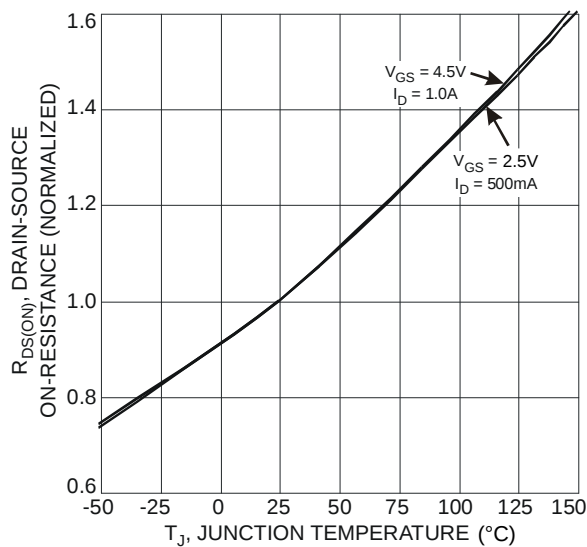


Fig. 5 On-Resistance Variation with Temperature

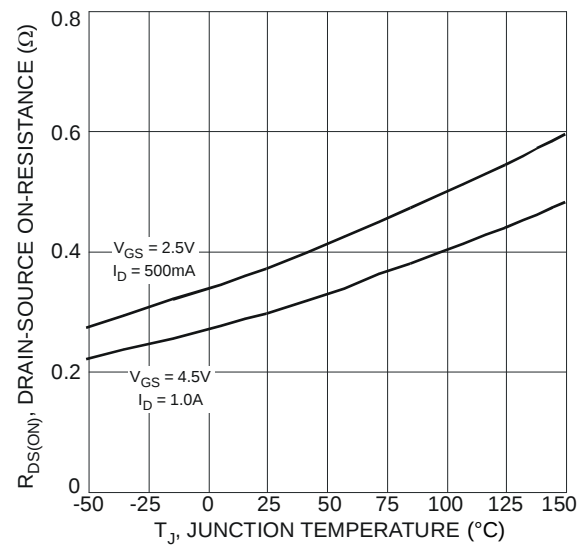


Fig. 6 On-Resistance Variation with Temperature

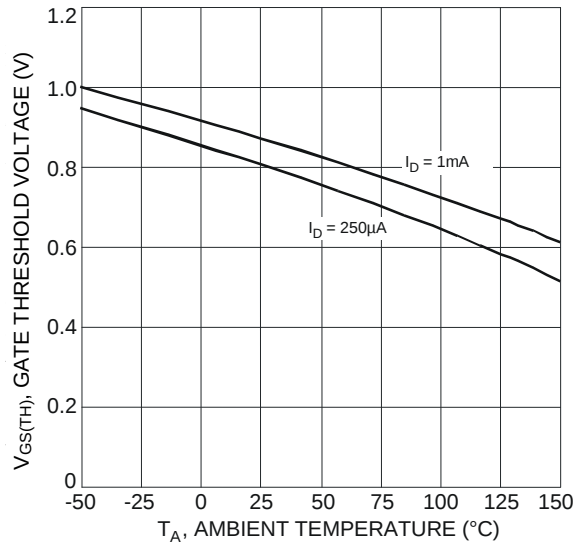


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

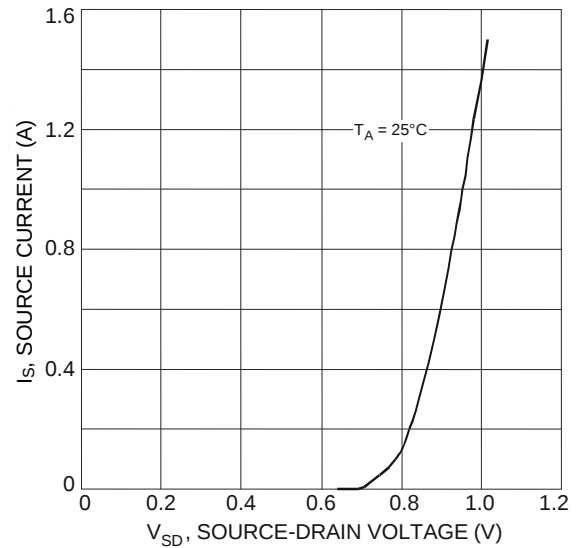


Fig. 8 Diode Forward Voltage vs. Current

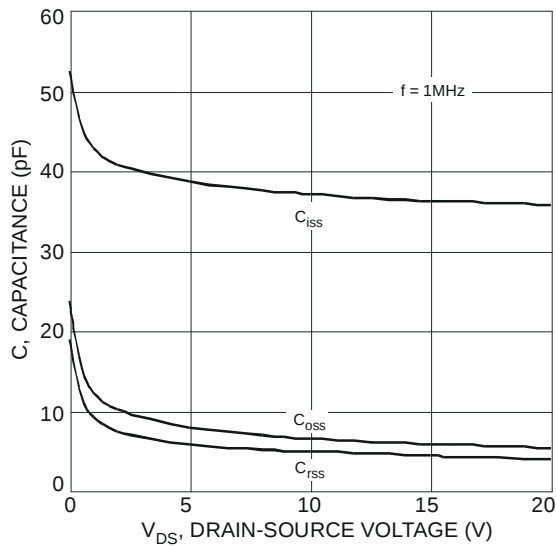


Fig. 9 Typical Capacitance

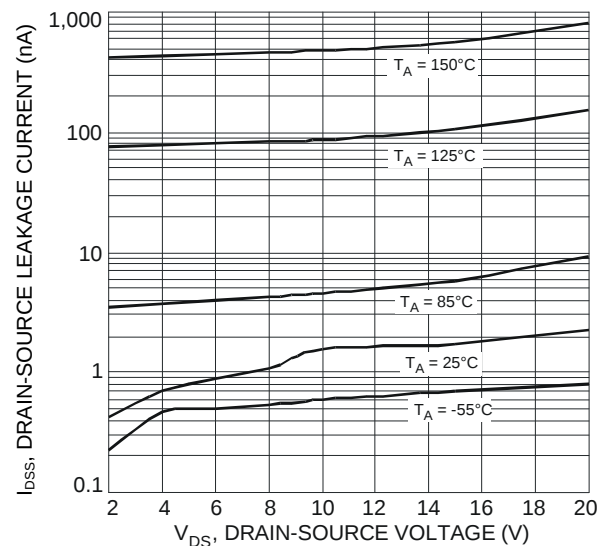


Fig. 10 Typical Drain-Source Leakage Current vs. Drain-Source Voltage

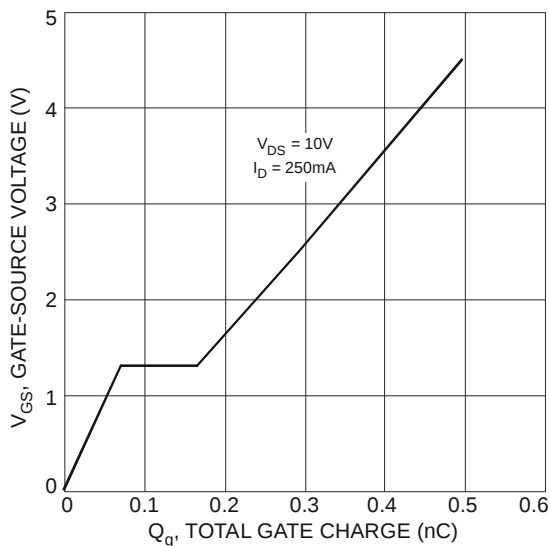


Fig. 11 Gate-Charge Characteristics

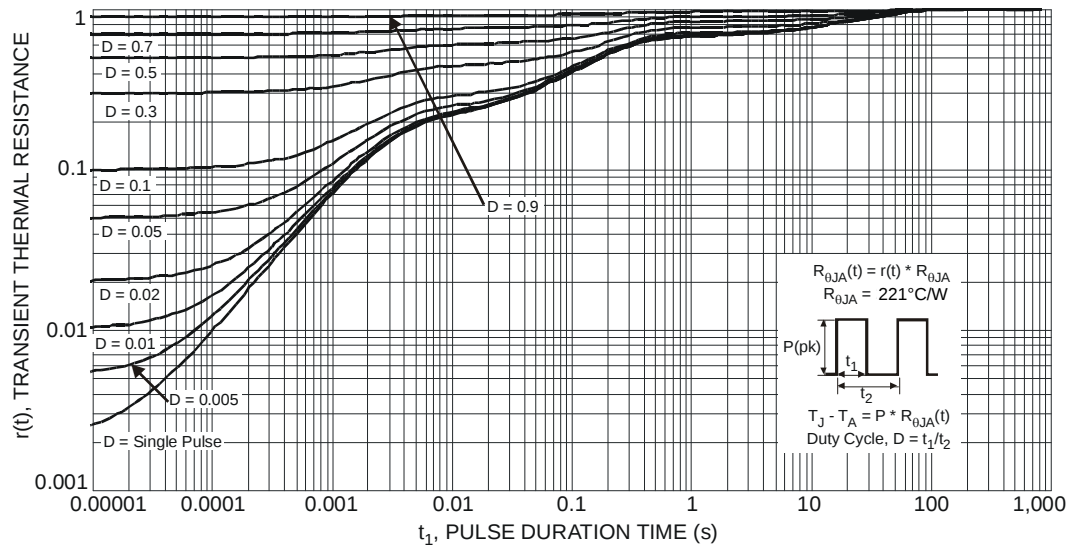
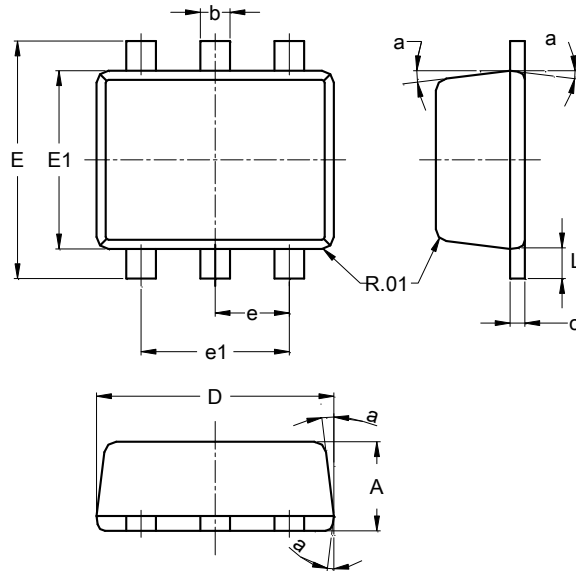


Fig. 12 Transient Thermal Response

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT563

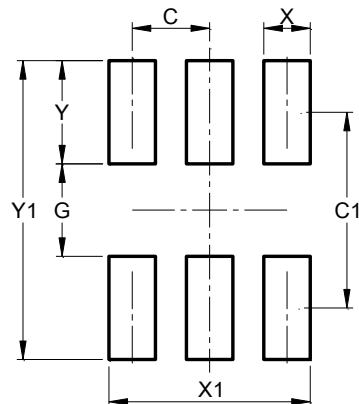


SOT563			
Dim	Min	Max	Typ
A	0.55	0.60	0.60
b	0.15	0.30	0.20
c	0.10	0.18	0.11
D	1.50	1.70	1.60
E	1.55	1.70	1.60
E1	1.10	1.25	1.20
e	--	--	0.50
e1	0.90	1.10	1.00
L	0.10	0.30	0.20
a	8°	9°	7°
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT563



Dimensions	Value (in mm)
C	0.500
C1	1.270
G	0.600
X	0.300
X1	1.300
Y	0.670
Y1	1.940

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