

**Maximum Ratings** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			$V_{DSS}$	-20	V
Gate-Source Voltage			$V_{GSS}$	$\pm 6$	V
Continuous Drain Current (Note 5)	Steady State	$T_A = +25^\circ\text{C}$ $T_A = +85^\circ\text{C}$	$I_D$	-0.82 -0.54	A
Pulsed Drain Current (Note 6)			$I_{DM}$	-3	A

**Thermal Characteristics**

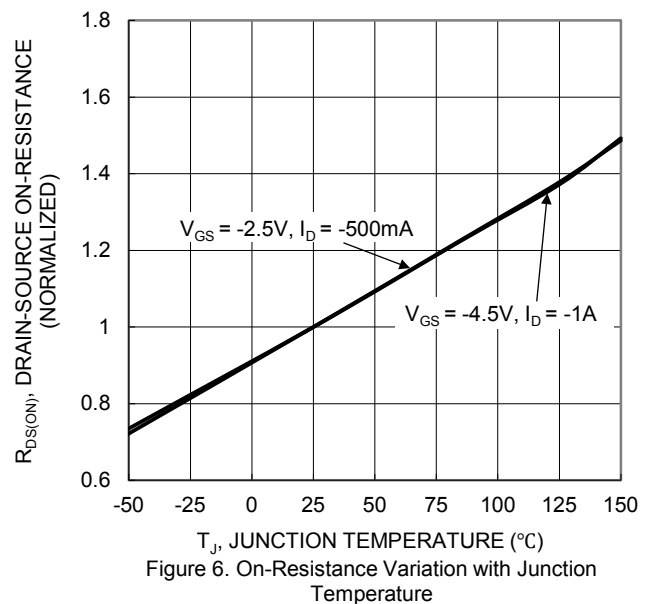
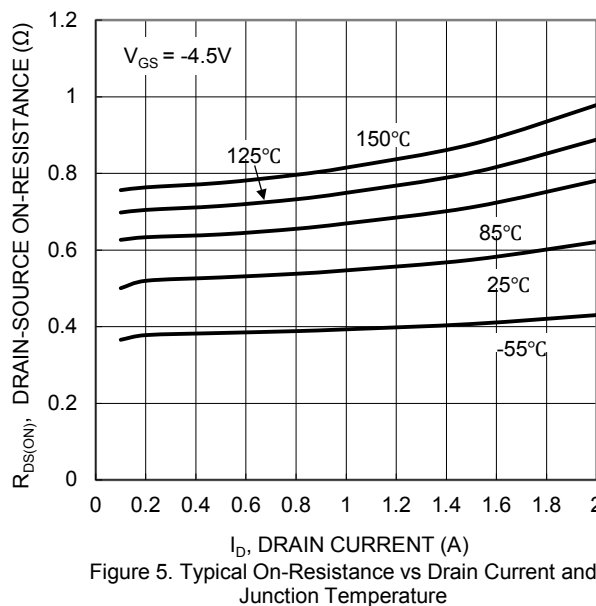
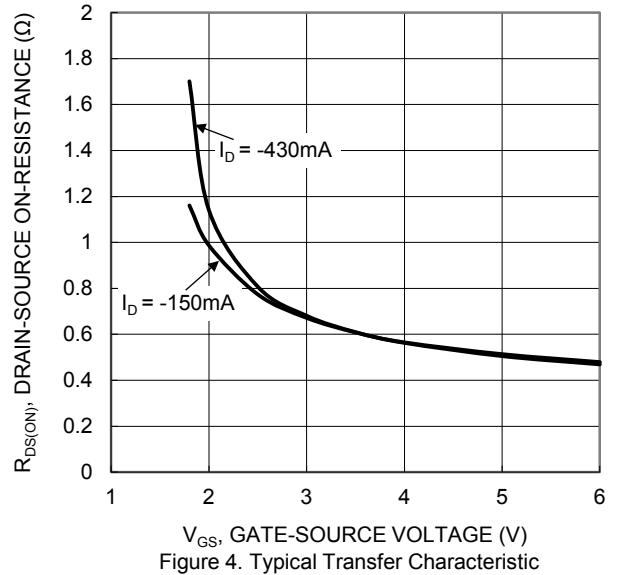
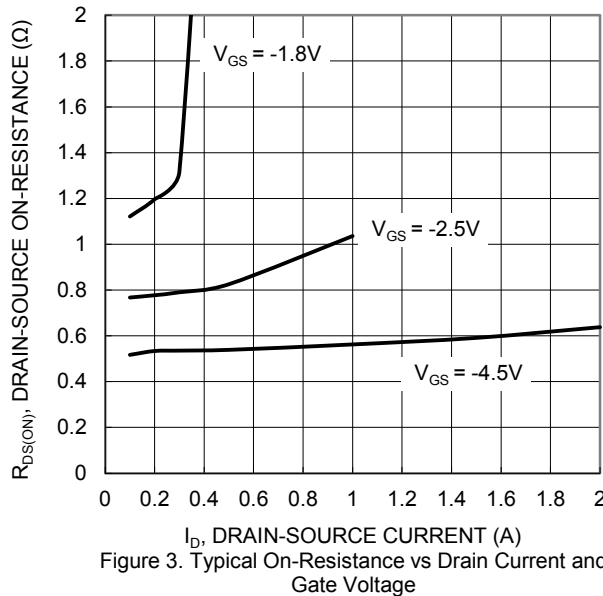
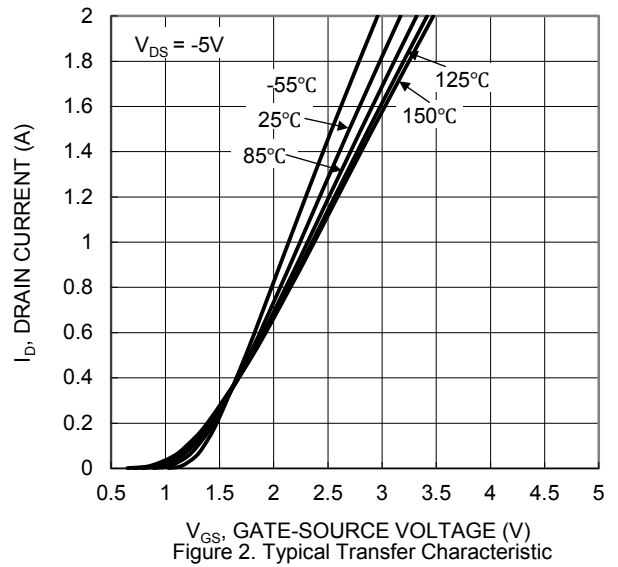
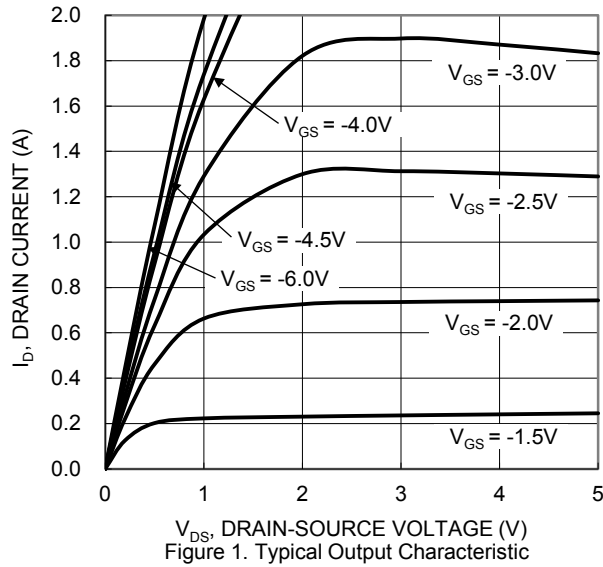
Characteristic		Symbol	Value	Unit
Power Dissipation (Note 5)		$P_D$	0.31	W
Thermal Resistance, Junction to Ambient	@ $T_A = +25^\circ\text{C}$ (Note 5)	$R_{\theta JA}$	398	$^\circ\text{C/W}$
Operating and Storage Temperature Range		$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

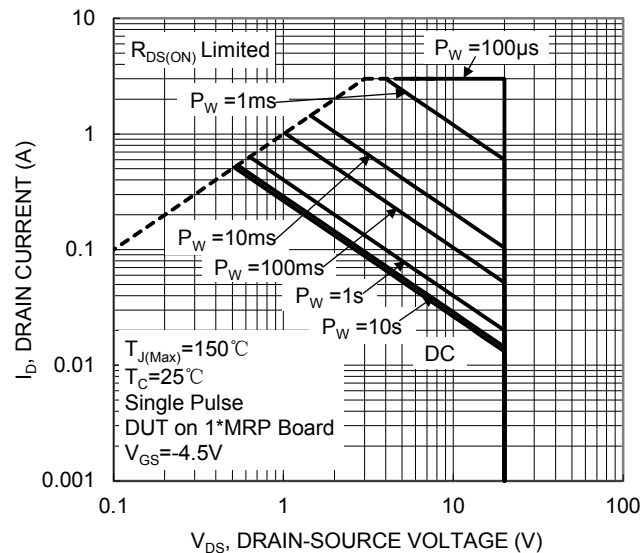
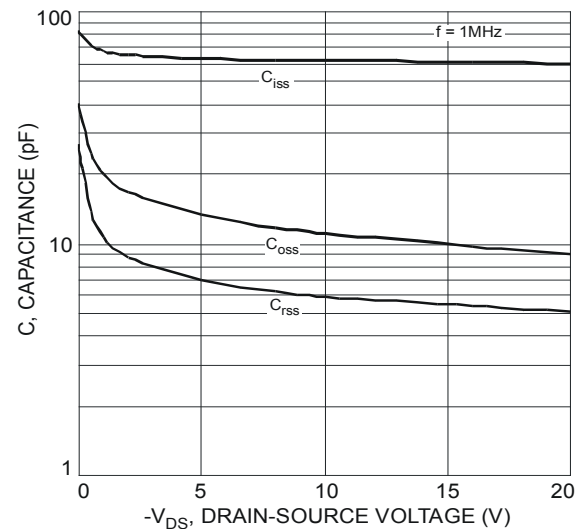
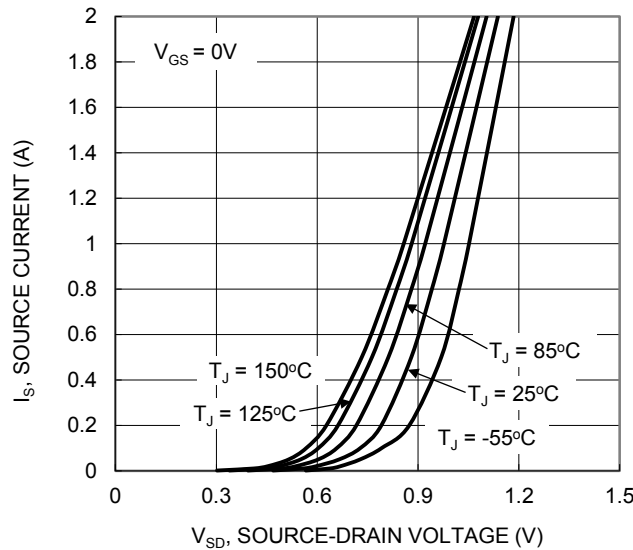
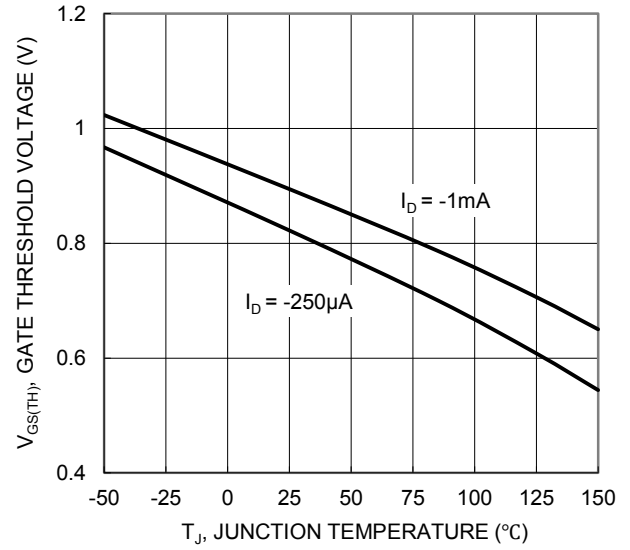
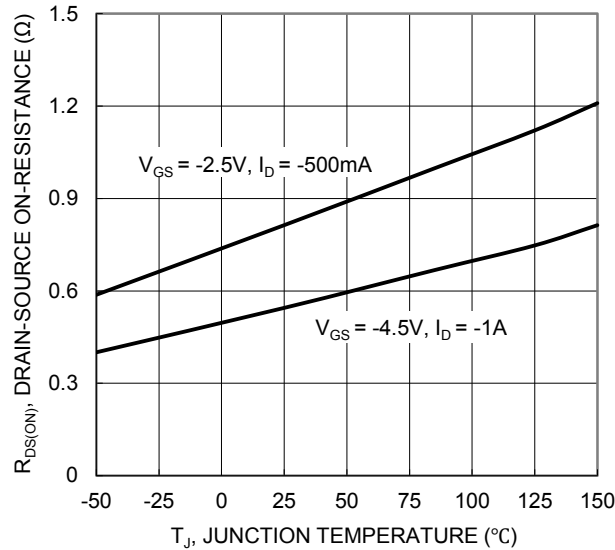
Notes: 5. Device mounted on FR-4 PCB, with minimum recommended pad layout.  
6. Repetitive rating, pulse width limited by junction temperature.

**Electrical Characteristics** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 7)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	-20	-	-	V	$V_{GS} = 0V, I_D = -250\mu A$
Zero Gate Voltage Drain Current $T_J = +25^\circ\text{C}$	$I_{DSS}$	-	-	-100	nA	$V_{DS} = -20V, V_{GS} = 0V$
Gate-Source Leakage	$I_{GSS}$	-	-	$\pm 2.0$	$\mu A$	$V_{GS} = \pm 4.5V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 7)</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	-0.5	-	-1.0	V	$V_{DS} = V_{GS}, I_D = -250\mu A$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	-	0.5	0.75	$\Omega$	$V_{GS} = -4.5V, I_D = -430mA$
			0.7	1.05		$V_{GS} = -2.5V, I_D = -300mA$
			1.0	1.5		$V_{GS} = -1.8V, I_D = -150mA$
Forward Transfer Admittance	$ Y_{fs} $	-	0.9	-	S	$V_{DS} = -10V, I_D = -250mA$
Diode Forward Voltage	$V_{SD}$	-	-0.8	-1.2	V	$V_{GS} = 0V, I_S = -150mA$
<b>DYNAMIC CHARACTERISTICS (Note 8)</b>						
Input Capacitance	$C_{iss}$	-	59.76	-	pF	$V_{DS} = -16V, V_{GS} = 0V,$ $f = 1.0MHz$
Output Capacitance	$C_{oss}$	-	12.07	-	pF	
Reverse Transfer Capacitance	$C_{rss}$	-	6.36	-	pF	
Total Gate Charge	$Q_g$	-	622.4	-	pC	$V_{GS} = -4.5V, V_{DS} = -10V,$ $I_D = -250mA$
Gate-Source Charge	$Q_{gs}$	-	100.3	-	pC	
Gate-Drain Charge	$Q_{gd}$	-	132.2	-	pC	
Turn-On Delay Time	$t_{D(ON)}$	-	5.1	-	ns	$V_{DD} = -10V, V_{GS} = -4.5V,$ $R_L = 47\Omega, R_G = 10\Omega,$ $I_D = -200mA$
Turn-On Rise Time	$t_R$	-	8.1	-	ns	
Turn-Off Delay Time	$t_{D(OFF)}$	-	28.4	-	ns	
Turn-Off Fall Time	$t_F$	-	20.7	-	ns	

Notes: 7. Short duration pulse test used to minimize self-heating effect.  
8. Guaranteed by design. Not subject to production testing.





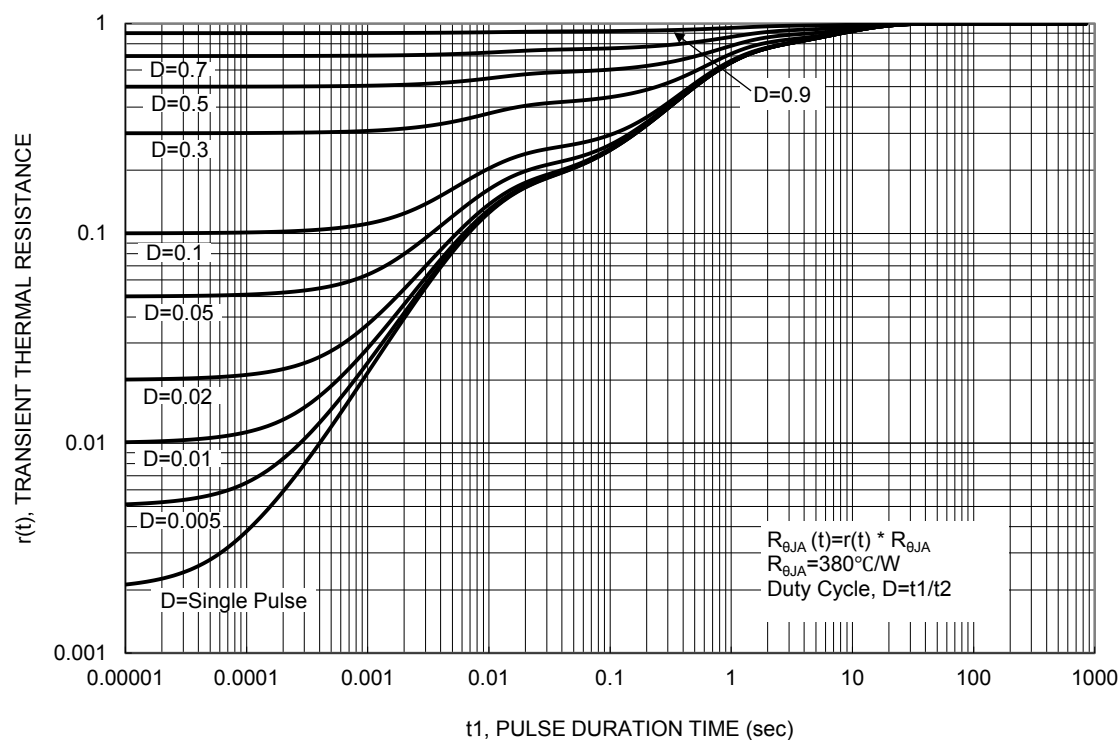
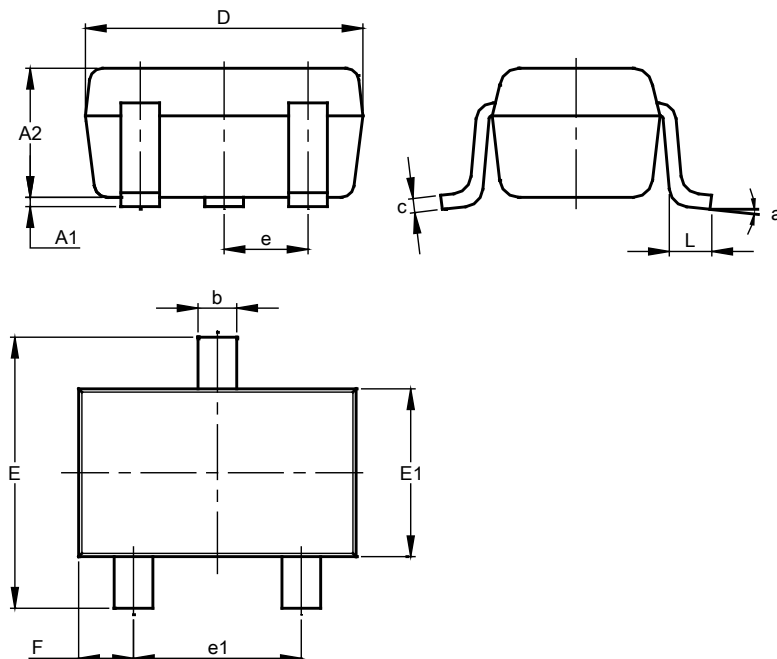


Figure 12. Transient Thermal Resistance

## Package Outline Dimensions

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

SOT323

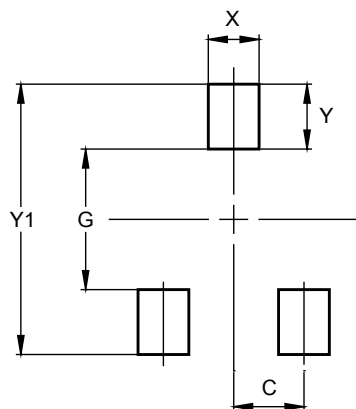


SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	8°		
All Dimensions in mm			

## Suggested Pad Layout

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

SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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