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

Characteristic		Symbol	Value	Unit
Drain Source Voltage		V_{DSS}	-30	V
Gate-Source Voltage		V_{GSS}	±12	V
Drain Current (Note 5)	T_A =+25°C T_A = +70°C	I_D	-2.8 -2.2	A
Drain Current (Note 5)	Pulsed	I_{DM}	-9	A
Body-Diode Continuous Current (Note 5)		I_S	-2.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P_D	1.4	W
Thermal Resistance, Junction to Ambient @T_A = 25°C (Note 5)	$R_{\theta JA}$	90	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes: 5. Device mounted on FR-4 PCB. t ≤5 sec.

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}	-30	—	—	V	V_{GS} = 0V, I_D = -250µA
Zero Gate Voltage Drain Current	I_{DSS}	—	—	-1	µA	V_{DS} = -30V, V_{GS} = 0V
Gate-Body Leakage	I_{GSS}	—	—	±100	nA	V_{GS} = ±12V, V_{DS} = 0V
ON CHARACTERISTICS (Note 6)						
Gate Threshold Voltage	$V_{GS(th)}$	-0.6	—	-1.4	V	V_{DS} = V_{GS}, I_D = -250µA
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	— —	— —	120 240	mΩ	V_{GS} = -4.5V, I_D = -2.8A V_{GS} = -2.5V, I_D = -1.8A
Forward Transconductance	g_{fs}	—	5	—	S	V_{DS} = -5V, I_D = -2.8A
Source-Drain Diode Forward Voltage	V_{SD}	—	—	-1.1	V	V_{GS} = 0V, I_S = -2.0A
DYNAMIC CHARACTERISTICS (Note 7)						
Input Capacitance	C_{iss}	—	285	—	pF	V_{DS} = -15V, V_{GS} = 0V f = 1.0MHz
Output Capacitance	C_{oss}	—	56	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	40	—	pF	
Gate Resistance	R_G	—	13	—	Ω	V_{DS} = 0V, V_{GS} = 0V f = 1.0MHz
SWITCHING CHARACTERISTICS (Note 7)						
Turn-On Delay Time	$t_{d(on)}$	—	5.6	—	ns	V_{DS} = -15V, V_{GS} = -4.5V, I_D = -1A, R_G = 6.0Ω
Rise Time	t_r	—	6.8	—		
Turn-Off Delay Time	$t_{d(off)}$	—	35.3	—		
Fall Time	t_f	—	19.2	—		
Total Gate Charge	Q_G	—	6.7 3.0	—	nC	V_{DS} = -15V, V_{GS} = -10V, I_D = -1.0A V_{DS} = -15V, V_{GS} = -4.5V, I_D = -1.0A
Gate-Source Charge	Q_{GS}	—	0.8	—		
Gate-Drain Charge	Q_{GD}	—	0.5	—		

Notes: 6. Short duration pulse test used to minimize self-heating effect.
7. Guaranteed by design. Not subject to production testing.

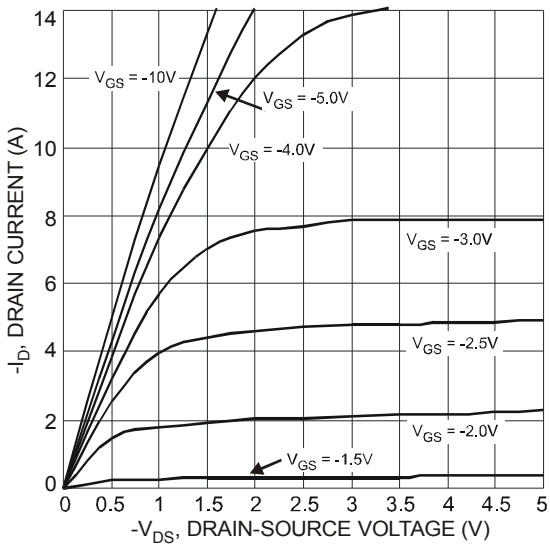


Fig. 1 Typical Output Characteristics

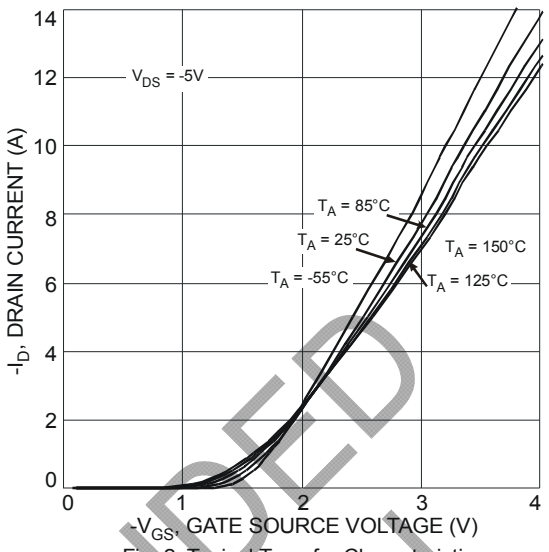


Fig. 2 Typical Transfer Characteristics

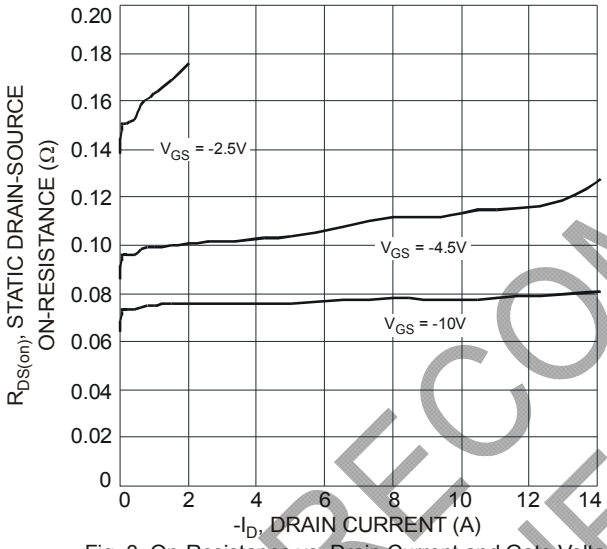


Fig. 3 On-Resistance vs. Drain Current and Gate Voltage

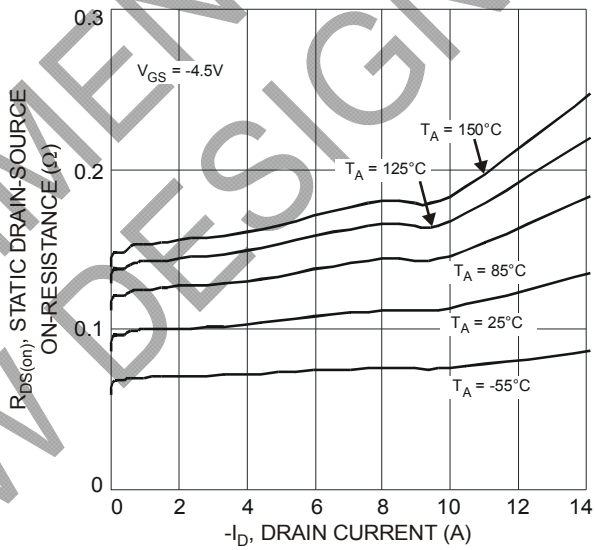


Fig. 4 On-Resistance vs. Drain Current and Temperature

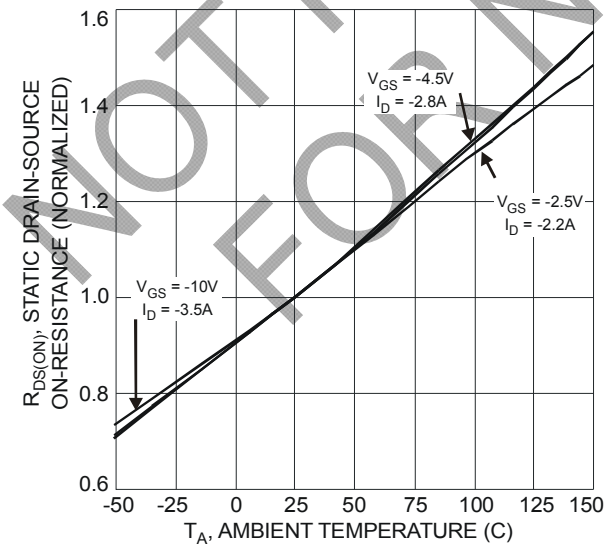


Fig. 5 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

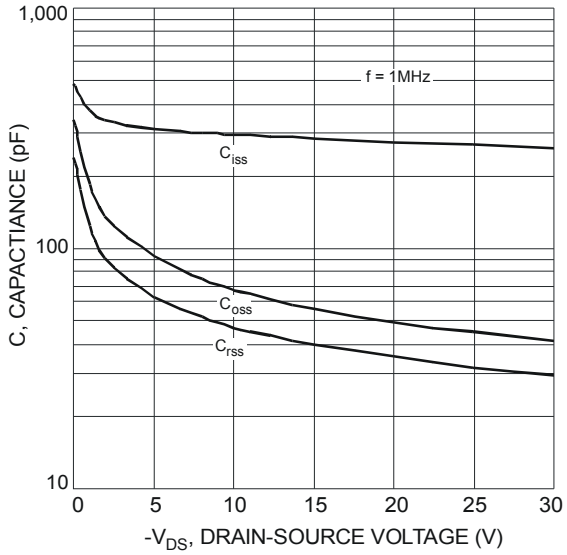


Fig. 6 Typical Capacitance

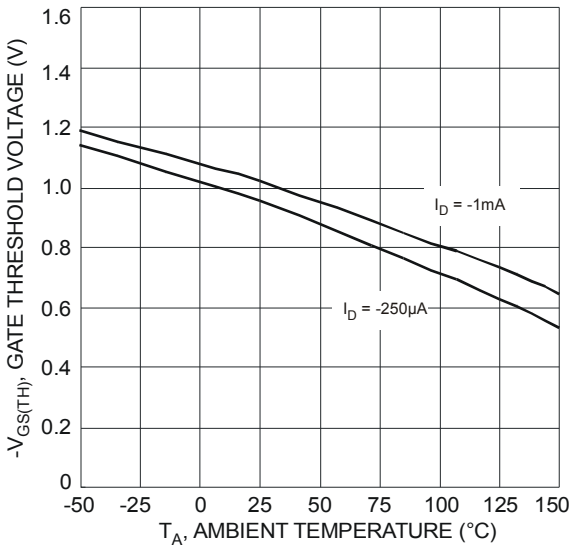


Fig. 7 Gate Threshold Voltage vs. Ambient Temperature

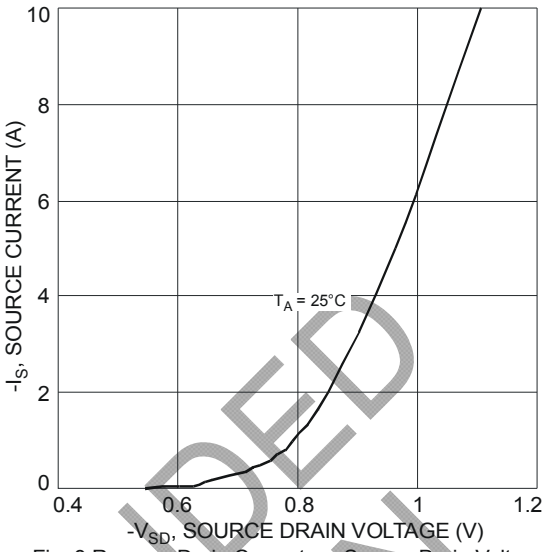
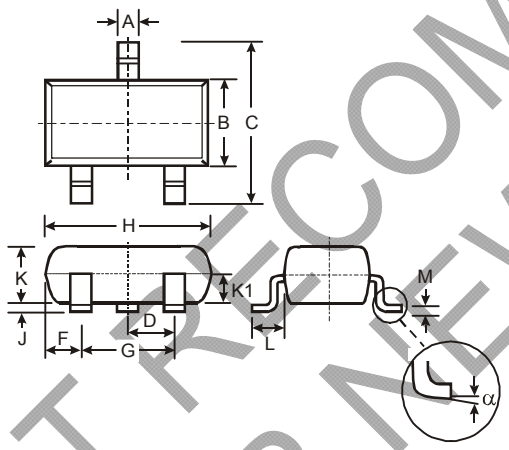


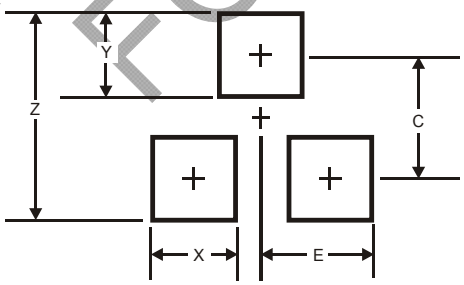
Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

Package Outline Dimensions



SOT-23			
Dim	**Min**	**Max**	**Typ**
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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