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}	±20	V
Continuous Drain Current (Note 5)	Steady State	T_A = 25°C T_A = 70°C	I_D	11.6 8.5	A
Pulsed Drain Current (Note 6)			I_{DM}	80	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	1.43	W
Thermal Resistance, Junction to Ambient @T_A = 25°C (Note 5)	$R_{\theta JA}$	87	°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 7)						
Drain-Source Breakdown Voltage	BV_{DSS}	30	-	-	V	V_{GS} = 0V, I_D = 250µA
Zero Gate Voltage Drain Current T_J = 25°C	I_{DSS}	-	-	1.0	µA	V_{DS} = 30V, V_{GS} = 0V
Gate-Source Leakage	I_{GSS}	-	-	±100	nA	V_{GS} = ±20V, V_{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	1.0	1.5	2.0	V	V_{DS} = V_{GS}, I_D = 250µA
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	-	7.0 9.6	10 14	mΩ	V_{GS} = 10V, I_D = 11.6A V_{GS} = 4.5V, I_D = 10.7A
Diode Forward Voltage	V_{SD}	-	0.7	1.0	V	V_{GS} = 0V, I_S = 2.1A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{iss}	-	1289	-	pF	V_{DS} = 15V, V_{GS} = 0V, f = 1.0MHz
Output Capacitance	C_{oss}	-	187	-	pF	
Reverse Transfer Capacitance	C_{rss}	-	162	-	pF	
Gate Resistance	R_g	-	0.97	-	Ω	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz
Total Gate Charge at 10V	Q_g	-	27.6	-	nC	V_{GS} = 10V, V_{DS} = 15V, I_D = 11.6A, I_G = 1.0mA
Total Gate Charge at 5V	Q_g	-	14.4	-	nC	V_{GS} = 5V, V_{DS} = 15V, I_D = 11.6A, I_G = 1.0mA
Gate-Source Charge	Q_{gs}	-	3.6	-	nC	
Gate-Drain Charge	Q_{gd}	-	4.9	-	nC	
Turn-On Delay Time	$t_{D(on)}$	-	7.04	-	ns	V_{DD} = 15V, V_{GS} = 10V, R_{GS} = 11Ω, I_D = 11.6A
Turn-On Rise Time	t_r	-	17.52	-	ns	
Turn-Off Delay Time	$t_{D(off)}$	-	36.13	-	ns	
Turn-Off Fall Time	t_f	-	19.67	-	ns	

Notes:
5. Device mounted on FR-4 PCB, with minimum recommended pad layout.
6. Repetitive rating, pulse width limited by junction temperature.
7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to production testing.

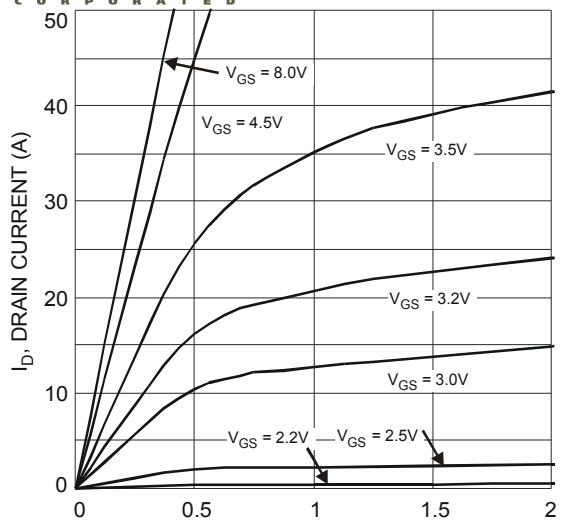


Fig. 1 Typical Output Characteristic

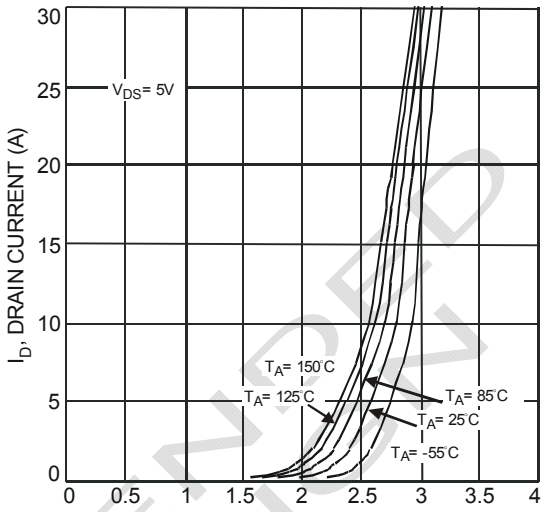


Fig. 2 Typical Transfer Characteristic

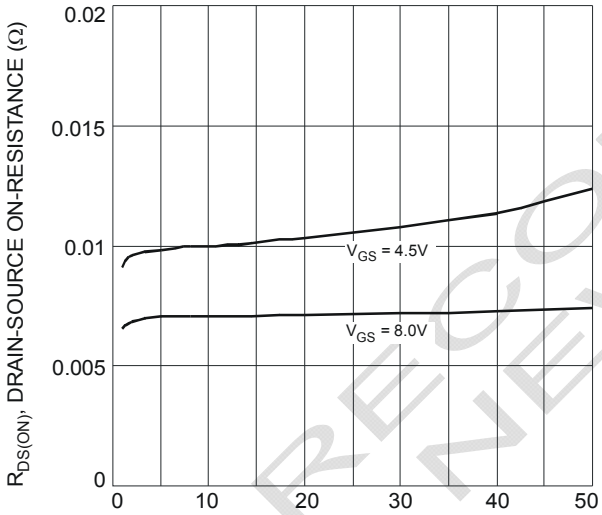


Fig. 3 Typical On-Resistance
vs. Drain Current and Gate Voltage

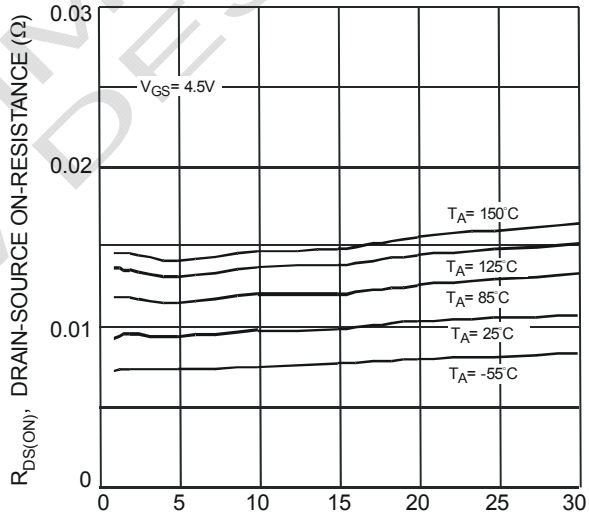


Fig. 4 Typical On-Resistance
vs. Drain Current and Temperature

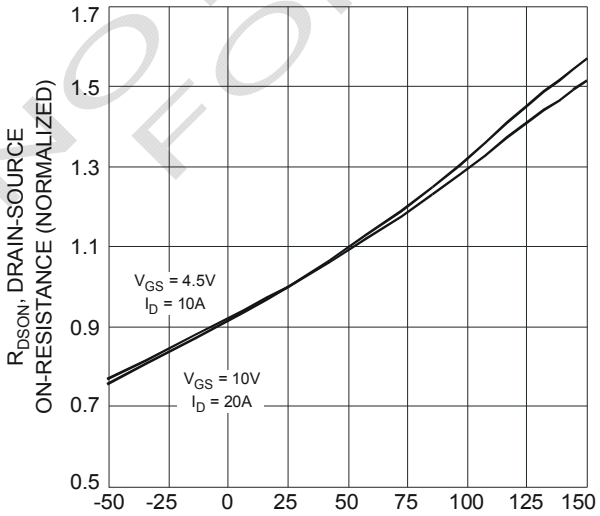


Fig. 5 On-Resistance Variation with Temperature

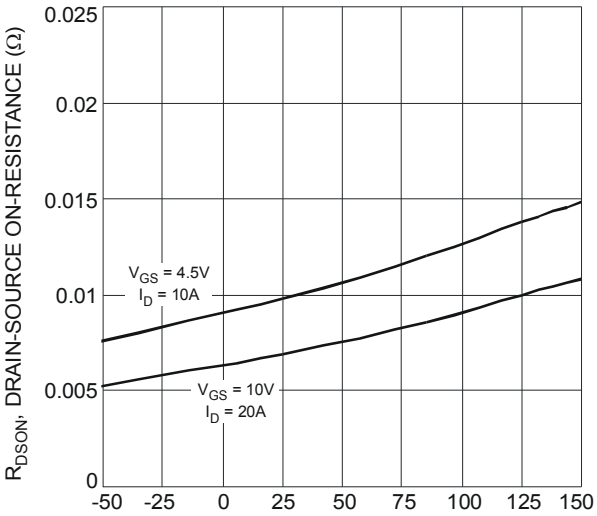


Fig. 6 On-Resistance Variation with Temperature

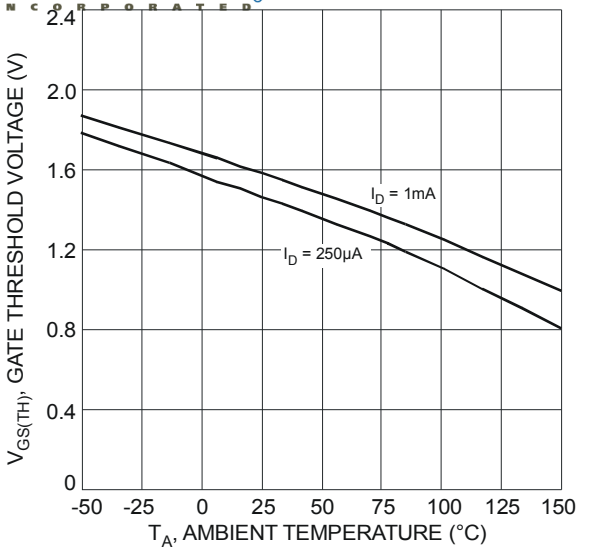


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

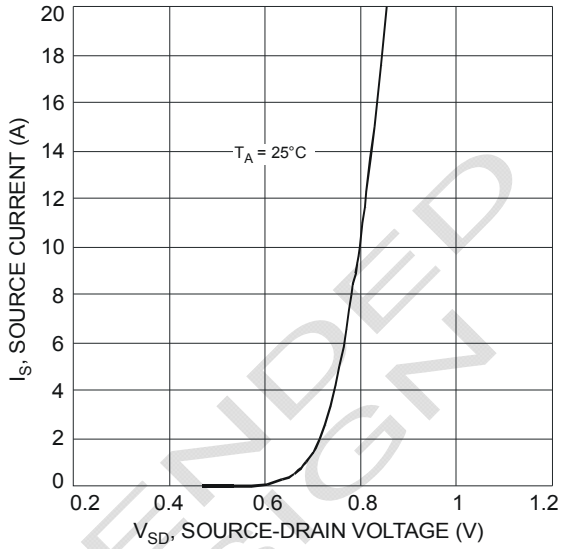


Fig. 8 Diode Forward Voltage vs. Current

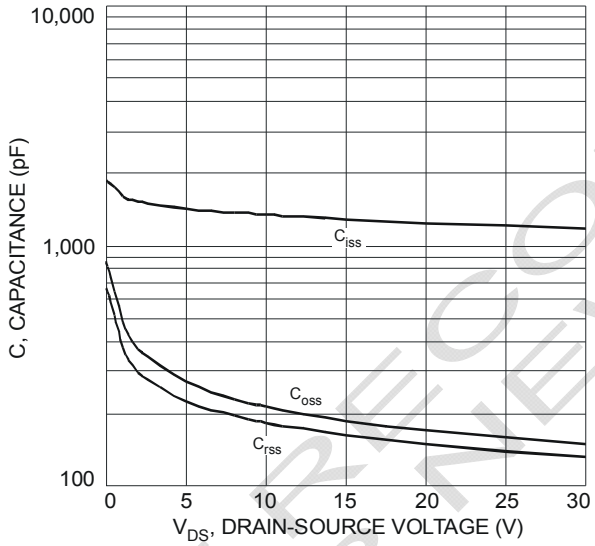


Fig. 9 Typical Total Capacitance

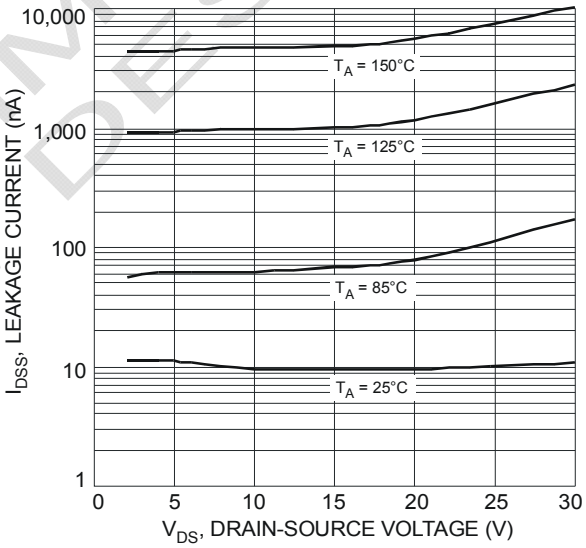


Fig. 10 Typical Leakage Current vs. Drain-Source Voltage

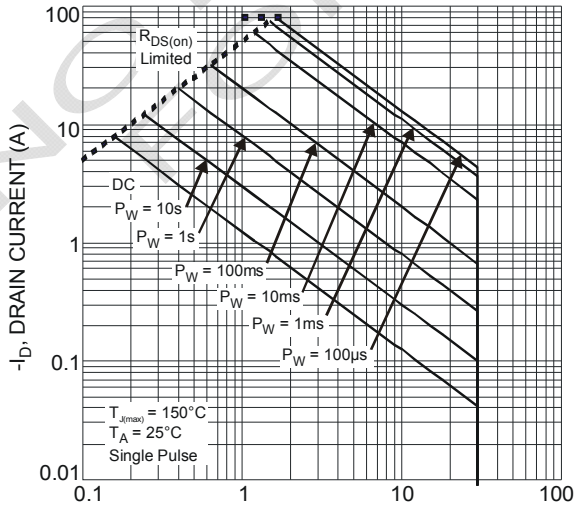


Fig. 11 Safe Operation Area

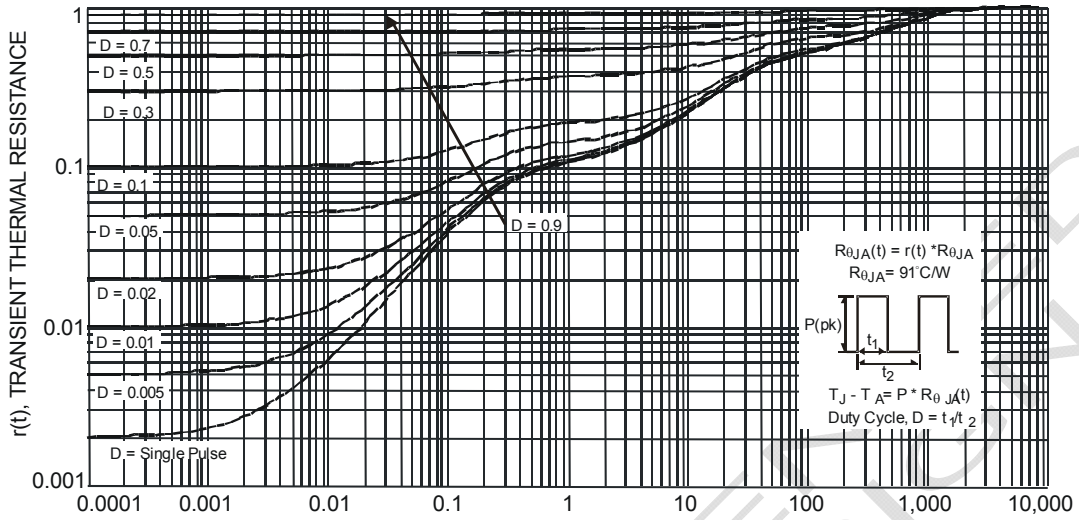
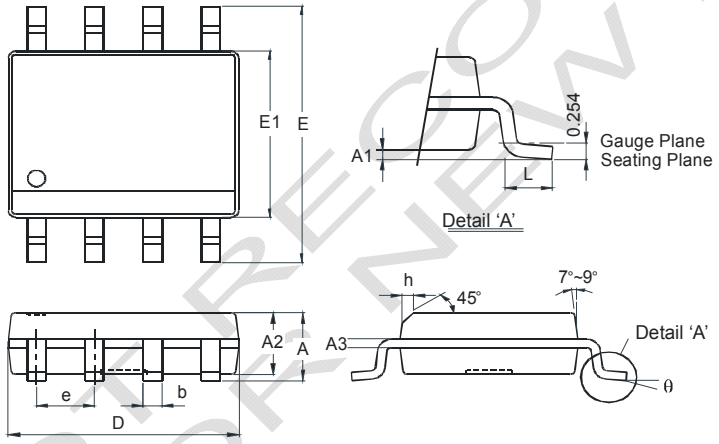


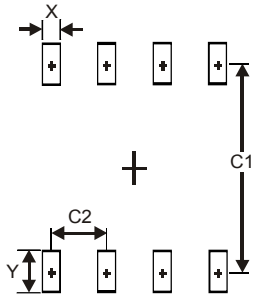
Fig. 12 Transient Thermal Response

Package Outline Dimensions



SO-8		
Dim	**Min**	**Max**
A	-	1.75
A1	0.10	0.20
A2	1.30	1.50
A3	0.15	0.25
b	0.3	0.5
D	4.85	4.95
E	5.90	6.10
E1	3.85	3.95
e	1.27 Typ	
h	-	0.35
L	0.62	0.82
θ	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
X	0.60
Y	1.55
C1	5.4
C2	1.27

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