Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V_{DSS}	-20	V
Gate-Source Voltage			V_{GSS}	±8	V
Continuous Drain Current (Note 6) V_{GS} = -4.5V	Steady State	T_A = 25°C T_A = 70°C	I_D	-700 -600	mA
	t<10s	T_A = 25°C T_A = 70°C	I_D	-850 -670	mA
Continuous Drain Current (Note 6) V_{GS} = -1.8V	Steady State	T_A = 25°C T_A = 70°C	I_D	-500 -400	mA
	t<10s	T_A = 25°C T_A = 70°C	I_D	-600 -550	mA
Pulsed Drain Current (10µs pulse, duty cycle = 1%)			I_{DM}	-2	A
Maximum Body Diode continuous Current			I_S	-800	mA

Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Units
Total Power Dissipation (Note 5)		P_D	0.46	W
Thermal Resistance, Junction to Ambient (Note 5)	Steady state	$R_{\theta JA}$	279	°C/W
	t<10s		210	°C/W
Total Power Dissipation (Note 6)		P_D	0.95	W
Thermal Resistance, Junction to Ambient (Note 6)	Steady state	$R_{\theta JA}$	134	°C/W
	t<10s		100	°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}	-20	-	-	V	V_{GS} = 0V, I_D = -1mA
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} = ±5V, V_{DS} = 0V
		-	-	±5.0		V_{GS} = ±8V, V_{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	-0.5	-	-1.0	V	V_{DS} = V_{GS}, I_D = -250µA
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	-	0.67	0.97	Ω	V_{GS} = -5V, I_D = -100mA
			0.7	1.0		V_{GS} = -4.5V, I_D = -100mA
		-	0.9	1.5		V_{GS} = -2.5V, I_D = -80mA
		-	1.2	2.0		V_{GS} = -1.8V, I_D = -40mA
		-	1.5	3.0		V_{GS} = -1.5V, I_D = -30mA
		-	5	-		V_{GS} = -1.2V, I_D = -1mA
Forward Transfer Admittance	$\|Y_{fs}\|$	-	0.7	-	S	V_{DS} = -3V, I_D = -100mA
Diode Forward Voltage	V_{SD}	-	-0.75	-1.2	V	V_{GS} = 0V, I_S = -330mA,
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{iss}	-	46.1	-	pF	V_{DS} = 10V, V_{GS} = 0V, f = 1.0MHz
Output Capacitance	C_{oss}	-	7.2	-		
Reverse Transfer Capacitance	C_{rss}	-	4.9	-		
Gate Resistance	R_g	-	14.3	-	Ω	V_{DS} = 0V, V_{GS} = 0V, f = 1.0MHz
Total Gate Charge V_{GS} = -4.5V	Q_g	-	0.5	-	nC	V_{DS} = -10V, I_D = -250mA
Gate-Source Charge	Q_{gs}	-	0.09	-		
Gate-Drain Charge	Q_{gd}	-	0.09	-		
Turn-On Delay Time	$t_{D(on)}$	-	8.5	-	ns	V_{DD} = -3V, V_{GS} = -2.5V, R_L = 300Ω, R_G = 25Ω, I_D = -100mA
Turn-On Rise Time	t_r	-	4.3	-		
Turn-Off Delay Time	$t_{D(off)}$	-	20.2	-		
Turn-Off Fall Time	t_f	-	19.2	-		

Notes: 5. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
6. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.
7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to product testing.

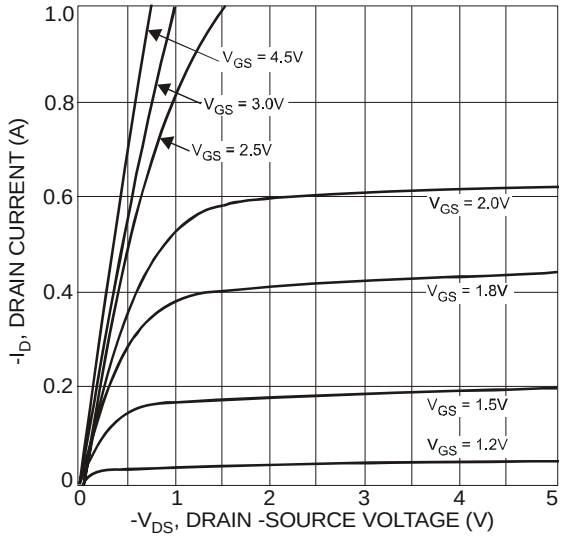


Fig. 1 Typical Output Characteristics

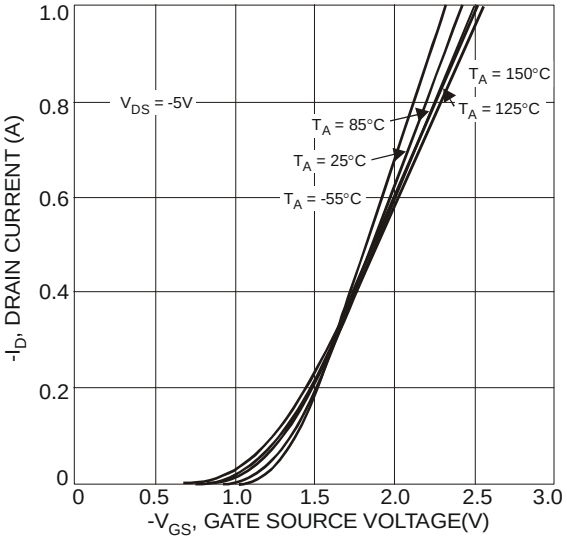


Fig. 2 Typical Transfer Characteristics

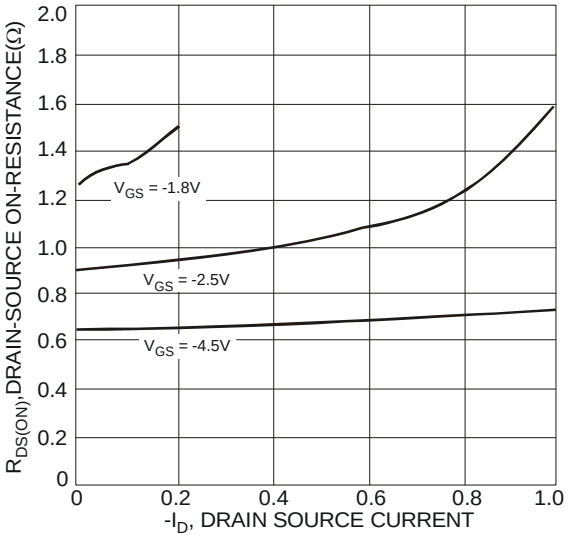


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

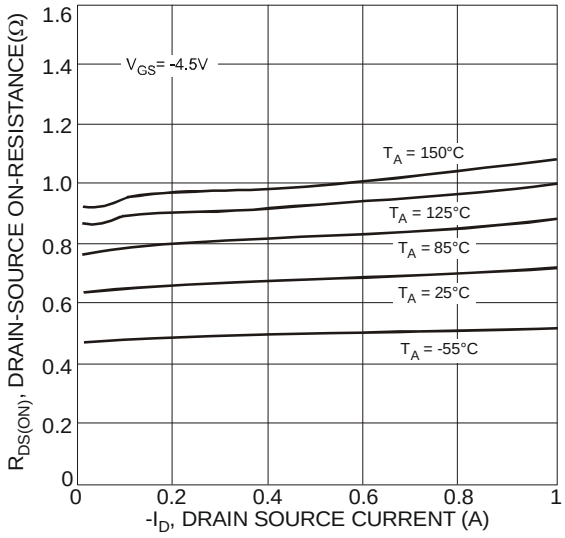


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

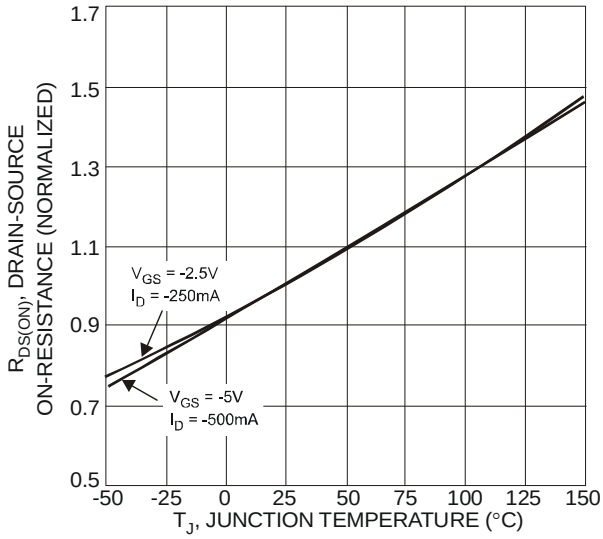


Fig. 5 On-Resistance Variation with Temperature

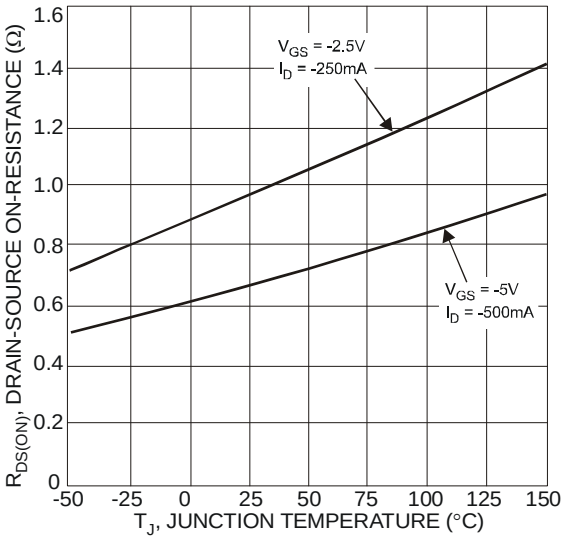


Fig. 6 On-Resistance vs.Temperature

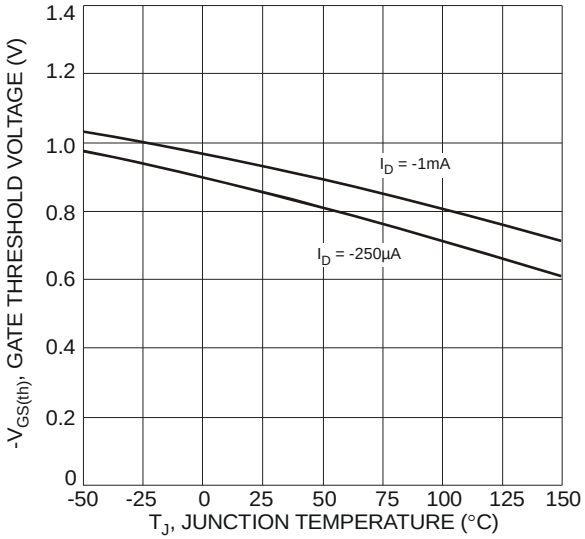


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

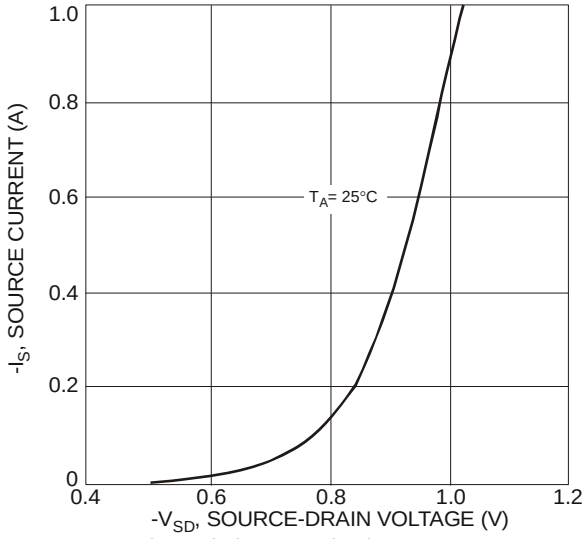


Fig. 8 Diode Forward Voltage vs. Current

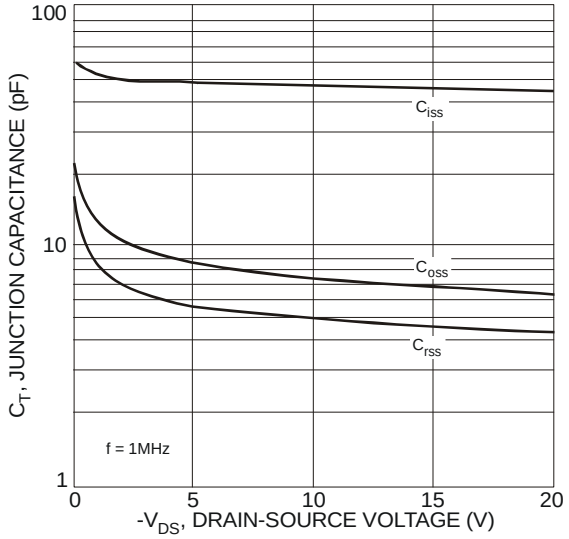


Fig. 9 Typical Junction Capacitance

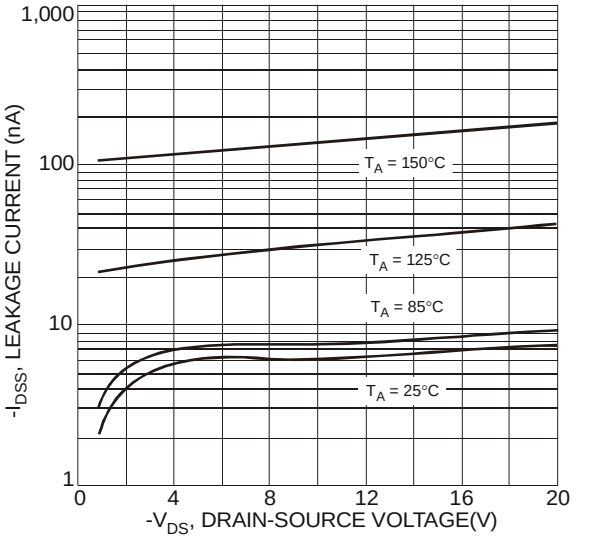


Fig. 10 Typical Drain-Source Leakage Current vs. Voltage

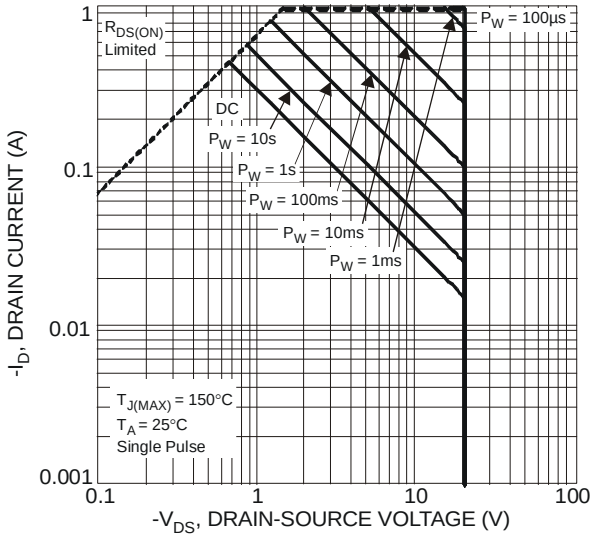


Fig. 11 SOA, Safe Operation Area

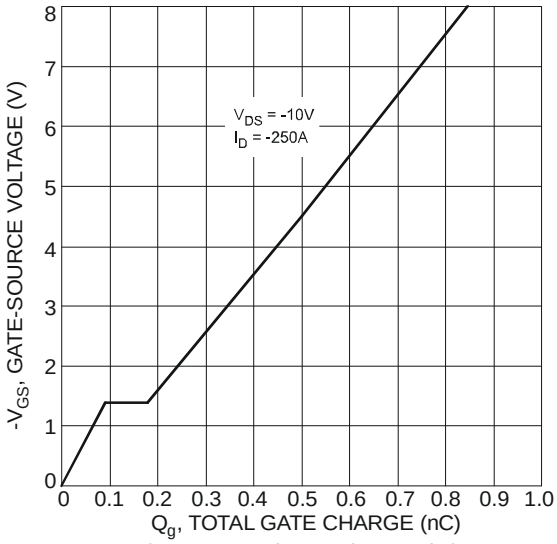


Fig. 12 Gate-Charge Characteristics

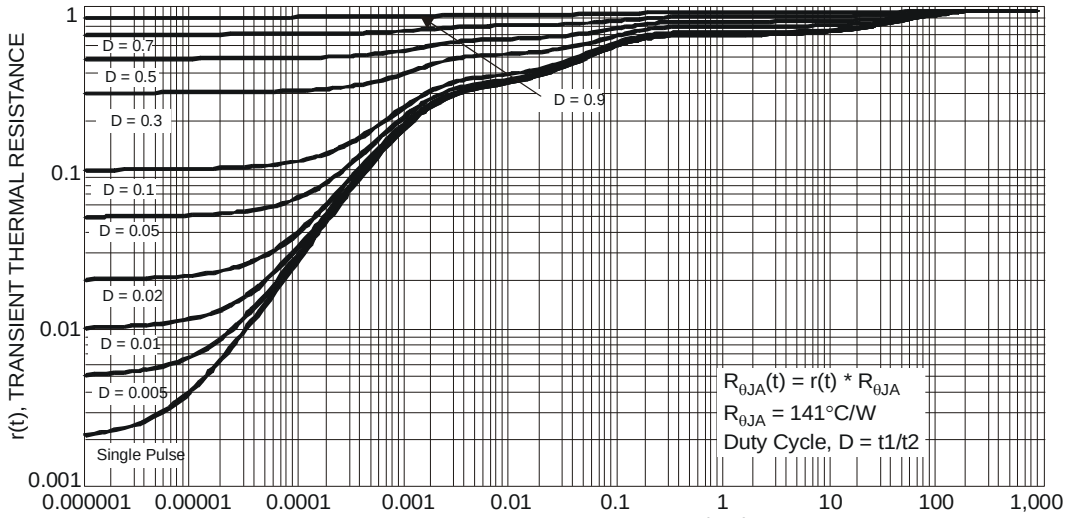
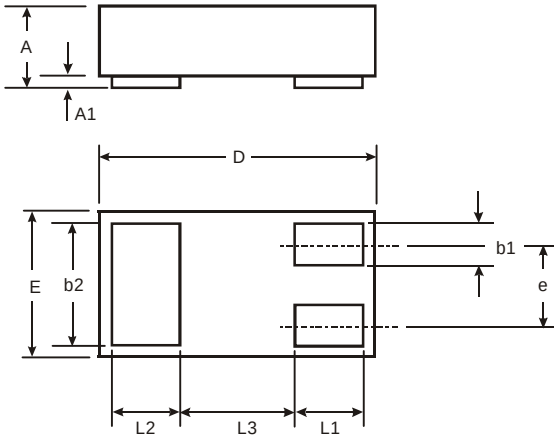


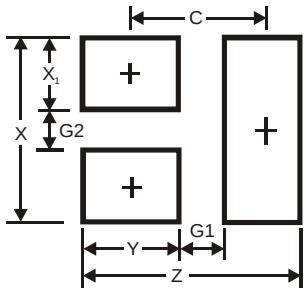
Fig. 13 Transient Thermal Resistance

Package Outline Dimensions



X2-DFN1006-3			
Dim	**Min**	**Max**	**Typ**
A	—	0.40	—
A1	0	0.05	0.02
b1	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.05	1.00
E	0.55	0.65	0.60
e	—	—	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	—	—	0.40
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.1
G1	0.3
G2	0.2
X	0.7
X1	0.25
Y	0.4
C	0.7

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