



**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	
Drain-Source Voltage	V <sub>DSS</sub>	-30	V	
Gate-Source Voltage	V <sub>GSS</sub>	±25	V	
Continuous Drain Current (Note 6) V <sub>GS</sub> = -10V	T <sub>C</sub> = +25°C T <sub>C</sub> = +70°C	I <sub>D</sub> I <sub>D</sub>	-18.0 -14.3	A
	T <sub>A</sub> = +25°C T <sub>A</sub> = +70°C	I <sub>D</sub>	-10.6 -8.5	A
Pulsed Drain Current (10µs pulse, duty cycle = 1%)	I <sub>DM</sub>	-80	A	
Maximum Continuous Body Diode Forward Current (Note 6)	I <sub>S</sub>	-3.6	A	
Avalanche Current (Note 7) L = 0.3mH	I <sub>AS</sub>	-17.5	A	
Avalanche Energy (Note 7) L = 0.3mH	E <sub>AS</sub>	64	mJ	

**Thermal Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Units	
Total Power Dissipation (Note 5)	P <sub>D</sub>	T <sub>A</sub> = +25°C	1.2	W
		T <sub>A</sub> = +70°C	0.9	
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	Steady State	104	°C/W
		t < 10s	45	
Total Power Dissipation (Note 6)	P <sub>D</sub>	T <sub>A</sub> = +25°C	1.7	W
		T <sub>A</sub> = +70°C	1.1	
Thermal Resistance, Junction to Ambient (Note 6)	R <sub>θJA</sub>	Steady State	72	°C/W
		t < 10s	37	
Thermal Resistance, Junction to Case (Note 6)	R <sub>θJC</sub>	13		
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C	

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 8)</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	-30	-	-	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = -1mA
Zero Gate Voltage Drain Current T <sub>J</sub> = +25°C	I <sub>DSS</sub>	-	-	-1.0	µA	V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	-	-	±100	nA	V <sub>GS</sub> = ±25V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 8)</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	-1.0	-1.7	-3.0	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250µA
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	-	16	20	mΩ	V <sub>GS</sub> = -10V, I <sub>D</sub> = -9A
		-	22	29		V <sub>GS</sub> = -5V, I <sub>D</sub> = -7A
Diode Forward Voltage	V <sub>SD</sub>	-	-0.7	-1.0	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -1A
<b>DYNAMIC CHARACTERISTICS (Note 9)</b>						
Input Capacitance	C <sub>iss</sub>	-	1931	-	pF	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	-	226	-	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>	-	168	-	pF	
Gate Resistance	R <sub>g</sub>	-	10.9	-	Ω	V <sub>DS</sub> = 0V, V <sub>GS</sub> = 0V, f = 1MHz
Total Gate Charge at V <sub>GS</sub> = -5V	Q <sub>g</sub>	-	8.8	-	nC	V <sub>DS</sub> = -15V, I <sub>D</sub> = -10A
Total Gate Charge at V <sub>GS</sub> = -10V	Q <sub>g</sub>	-	16.5	-	nC	
Gate-Source Charge	Q <sub>gs</sub>	-	2.6	-	nC	V <sub>DS</sub> = -15V, I <sub>D</sub> = -10A
Gate-Drain Charge	Q <sub>gd</sub>	-	3.6	-	nC	
Turn-On Delay Time	t <sub>D(on)</sub>	-	8.2	-	ns	V <sub>GEN</sub> = -10V, V <sub>DD</sub> = -15V, R <sub>GEN</sub> = 3Ω, I <sub>D</sub> = -10A
Turn-On Rise Time	t <sub>r</sub>	-	14	-	ns	
Turn-Off Delay Time	t <sub>D(off)</sub>	-	65	-	ns	
Turn-Off Fall Time	t <sub>f</sub>	-	31.6	-	ns	

- Notes:
- Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
  - Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.
  - I<sub>AS</sub> and E<sub>AS</sub> rating are based on low frequency and duty cycles to keep T<sub>J</sub> = +25°C.
  - Short duration pulse test used to minimize self-heating effect.
  - Guaranteed by design. Not subject to product testing.

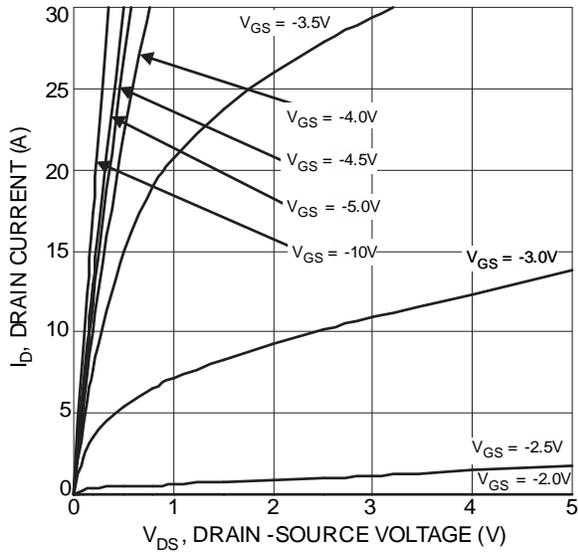


Figure 1 Typical Output Characteristics

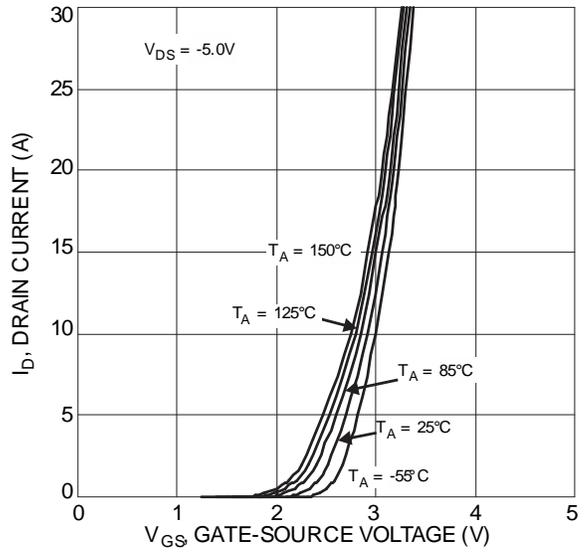


Figure 2 Typical Transfer Characteristics

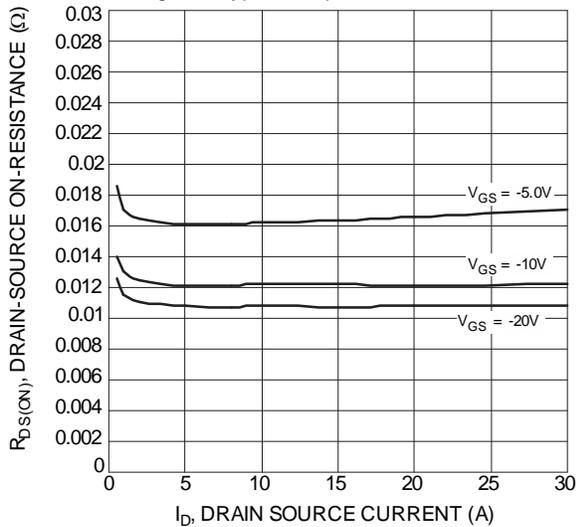


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

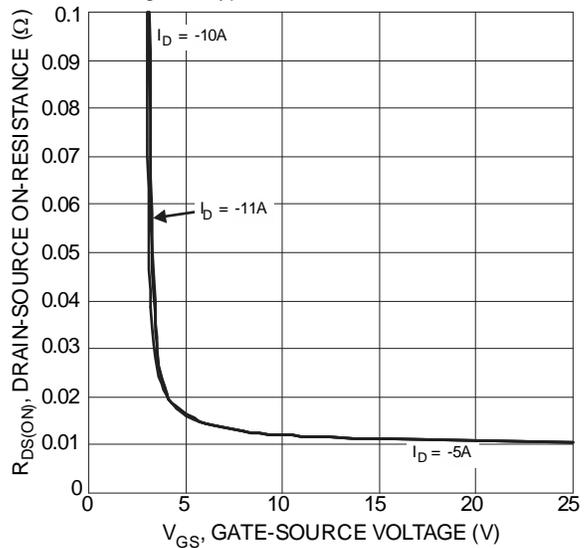


Figure 4 Typical Transfer Characteristics

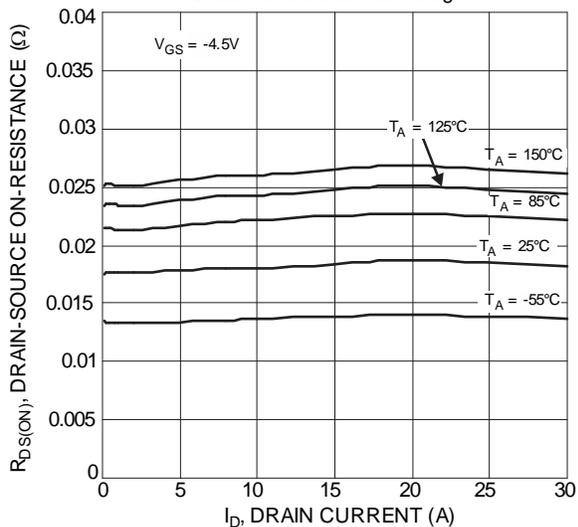


Figure 5 Typical On-Resistance vs. Drain Current and Temperature

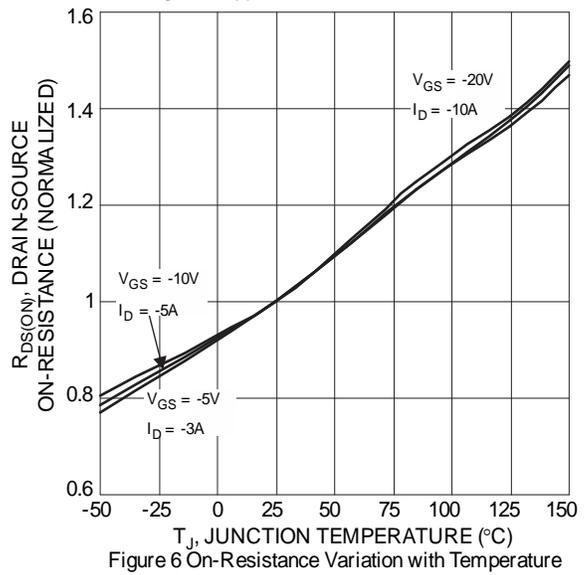


Figure 6 On-Resistance Variation with Temperature

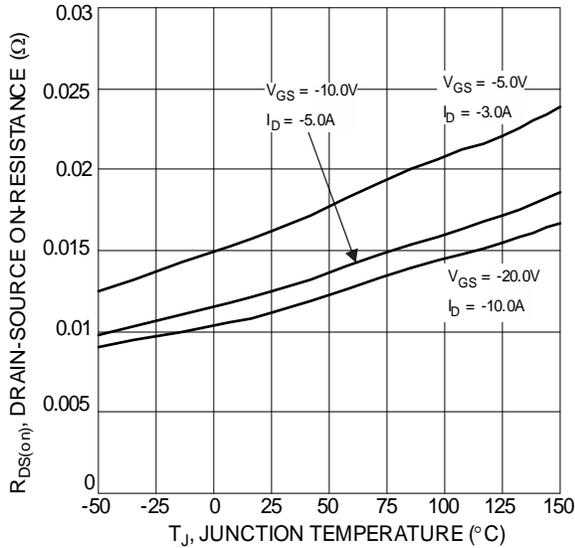


Figure 7 On-Resistance Variation with Temperature

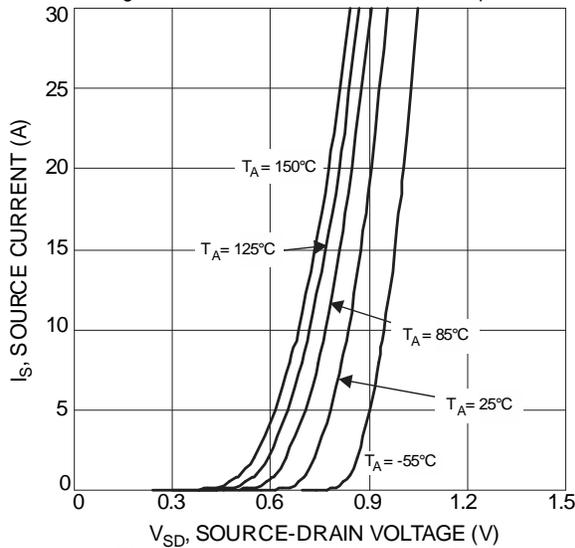


Figure 9 Diode Forward Voltage vs. Current

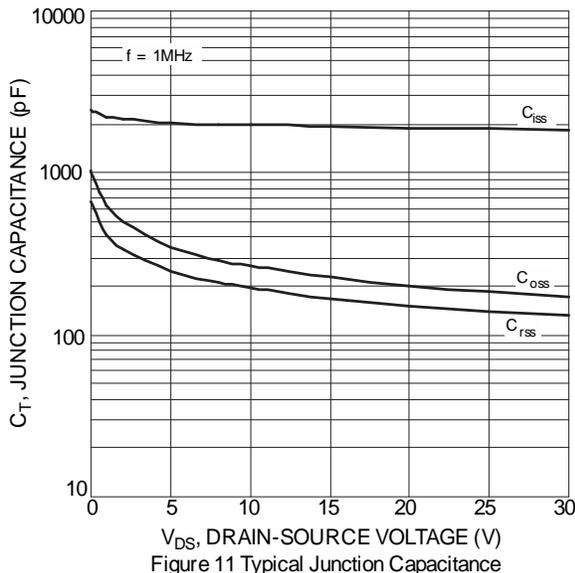


Figure 11 Typical Junction Capacitance

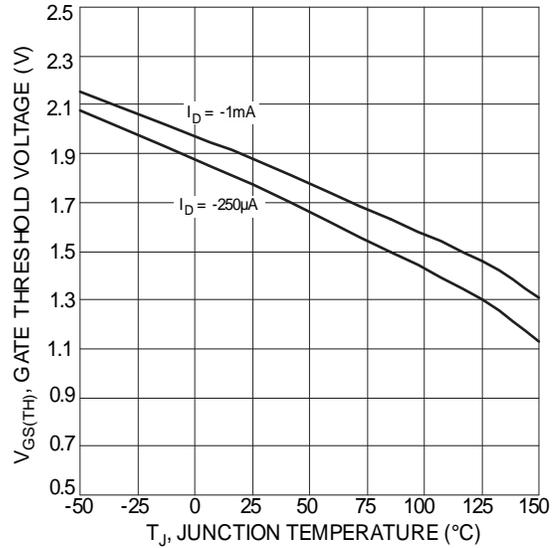


Figure 8 Gate Threshold Variation vs. Ambient Temperature

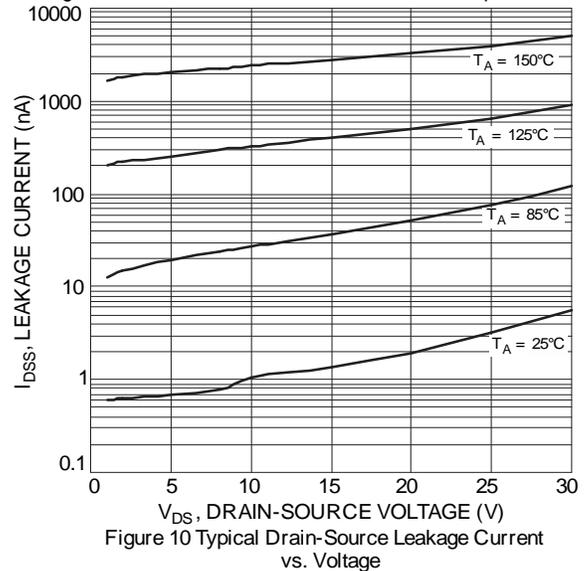


Figure 10 Typical Drain-Source Leakage Current vs. Voltage

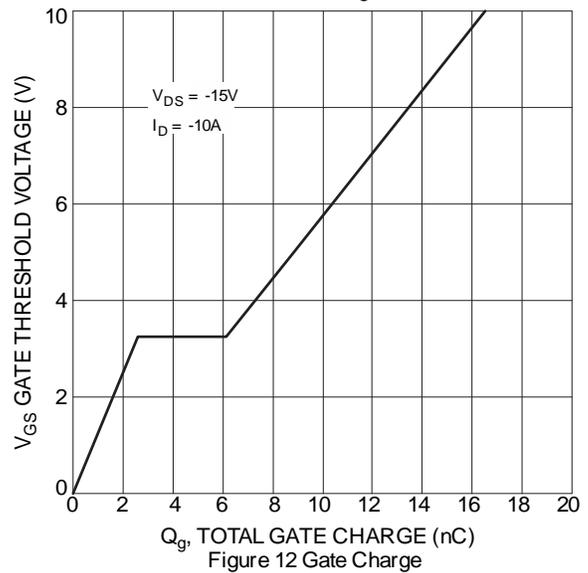
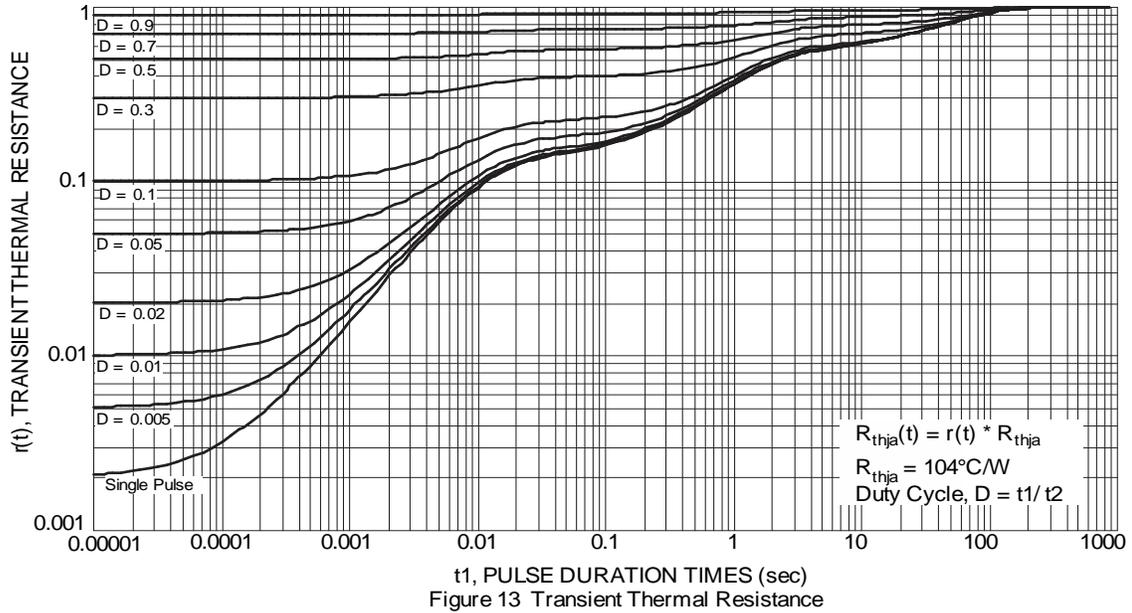


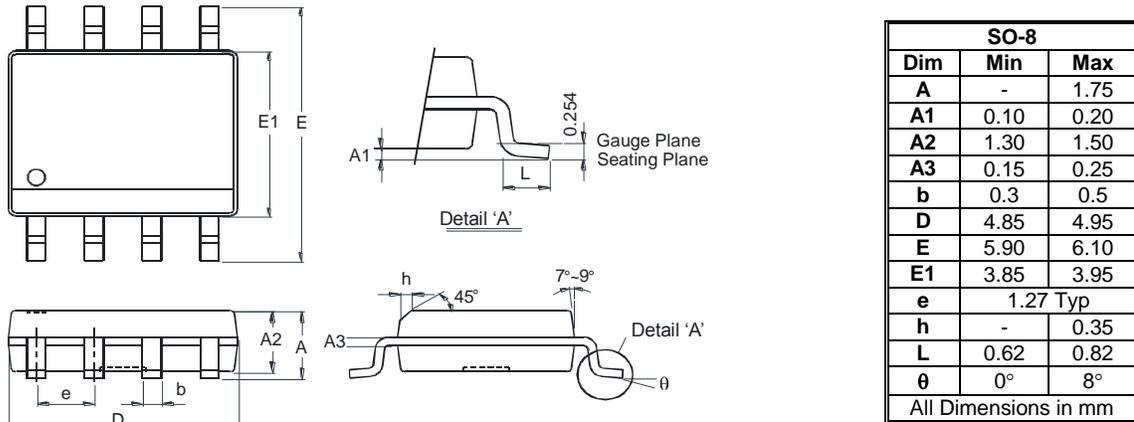
Figure 12 Gate Charge



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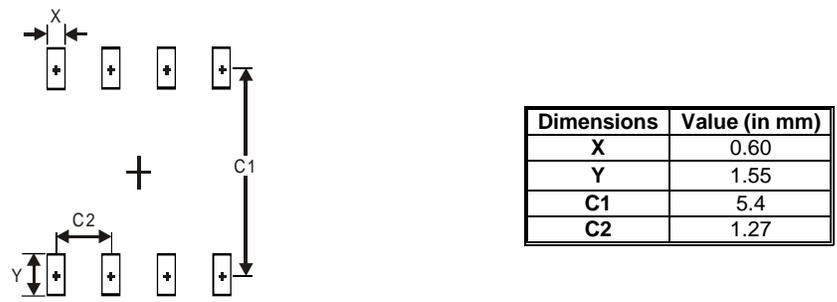
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