

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

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V _{DSS}	100	V
Gate-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current	I _D	108 76	A
		T _C = +25°C T _C = +100°C	
Maximum Continuous Body Diode Forward Current	I _S	90	A
Pulsed Drain Current (10μs pulse, duty cycle = 1%)	I _{DM}	92	A
Avalanche Current, L=0.3mH (Note 7)	I _{AS}	10	A
Avalanche Energy, L=0.3mH (Note 7)	E _{AS}	15	mJ

Thermal Characteristics

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 5)	P _D	2.4	W
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	61	°C/W
Total Power Dissipation	P _D	166	W
		T _C = +25°C	
Thermal Resistance, Junction to Case	R _{θJC}	0.9	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +175	°C

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}	100	—	—	V	V _{GS} = 0V, I _D = 1mA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1	μA	V _{DS} = 80V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 6)						
Gate Threshold Voltage	V _{GS(TH)}	1.4	1.9	3.5	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	6.9	9.5	mΩ	V _{GS} = 10V, I _D = 13A
Diode Forward Voltage	V _{SD}	—	0.8	1.3	V	V _{GS} = 0V, I _S = 13A
DYNAMIC CHARACTERISTICS (Note 7)						
Input Capacitance	C _{ISS}	—	2592	—	pF	V _{DS} = 50V, V _{GS} = 0V f = 1MHz
Output Capacitance	C _{OSS}	—	792	—		
Reverse Transfer Capacitance	C _{RSS}	—	45	—		
Gate Resistance	R _G	—	2	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz
Total Gate Charge	Q _g	—	53.7	—	nC	V _{DD} = 50V, I _D = 13A, V _{GS} = 10V
Gate-Source Charge	Q _{GS}	—	10.6	—		
Gate-Drain Charge	Q _{gd}	—	8.2	—		
Turn-On Delay Time	t _{D(ON)}	—	11.6	—	ns	V _{DD} = 50V, V _{GS} = 10V, I _D = 13A, R _G = 6Ω
Turn-On Rise Time	t _R	—	14.1	—		
Turn-Off Delay Time	t _{D(OFF)}	—	42.9	—		
Turn-Off Fall Time	t _F	—	22	—	ns	I _F = 13A, di/dt = 100A/μs
Reverse Recovery Time	t _{RR}	—	49.8	—		
Reverse Recovery Charge	Q _{RR}	—	85.1	—	nC	

- Notes: 5. Device mounted on FR-4 PC board, with minimum recommended pad layout, single sided.
6. Short duration pulse test used to minimize self-heating effect.
7. Guaranteed by design. Not subject to product testing.

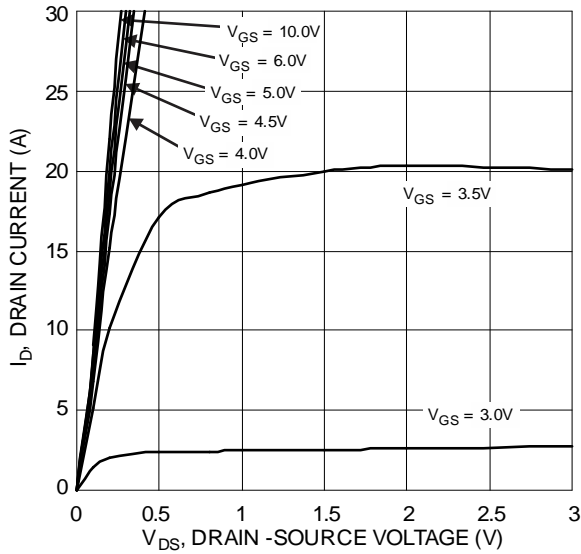


Figure 1 Typical Output Characteristics

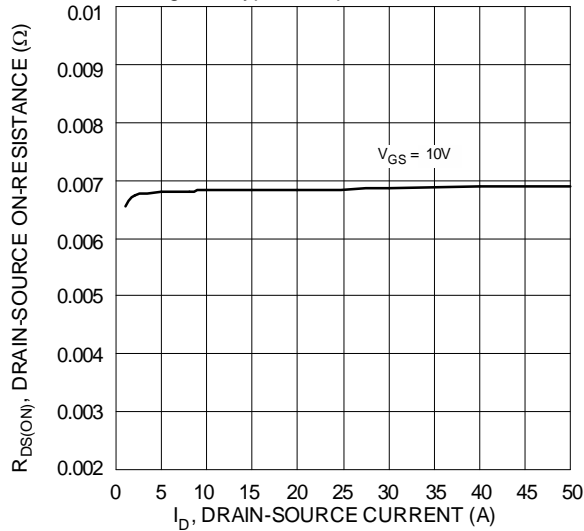


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

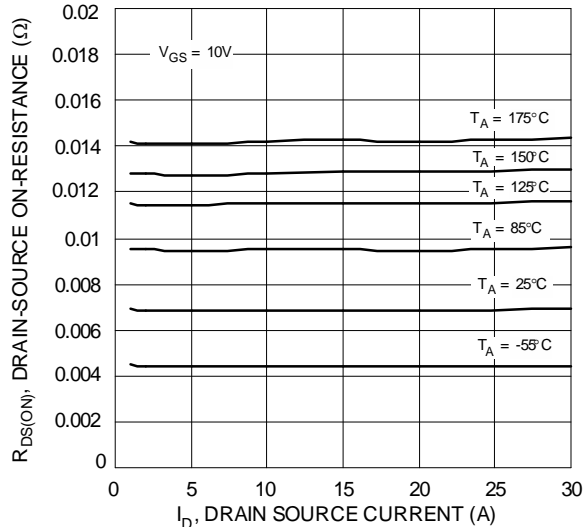


Figure 5 Typical On-Resistance vs. Drain Current and Junction Temperature

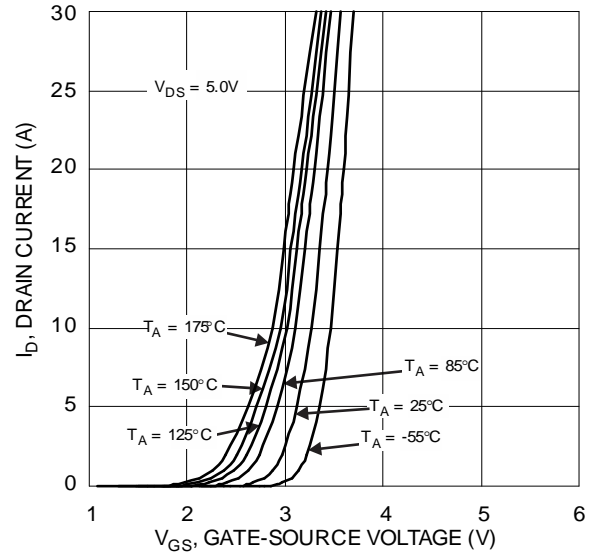


Figure 2 Typical Transfer Characteristics

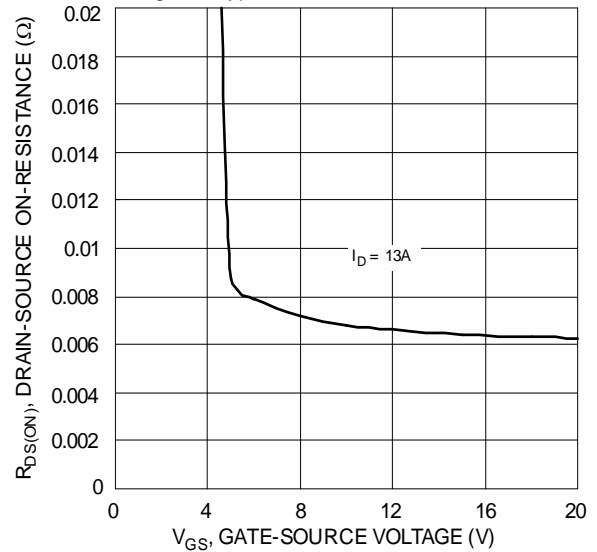


Figure 4 Typical Transfer Characteristics

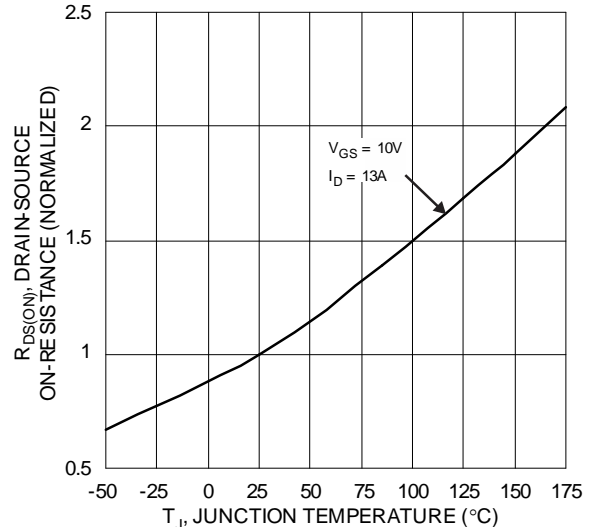
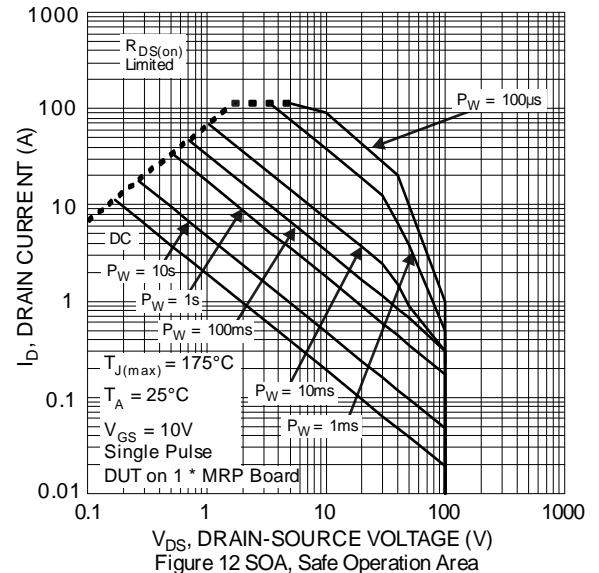
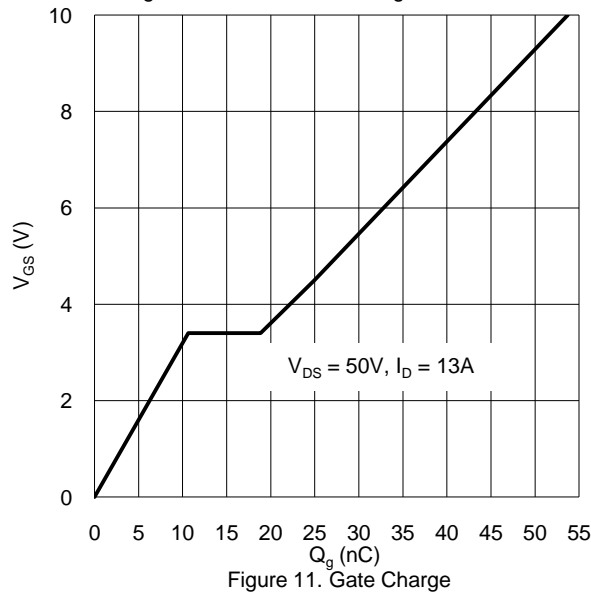
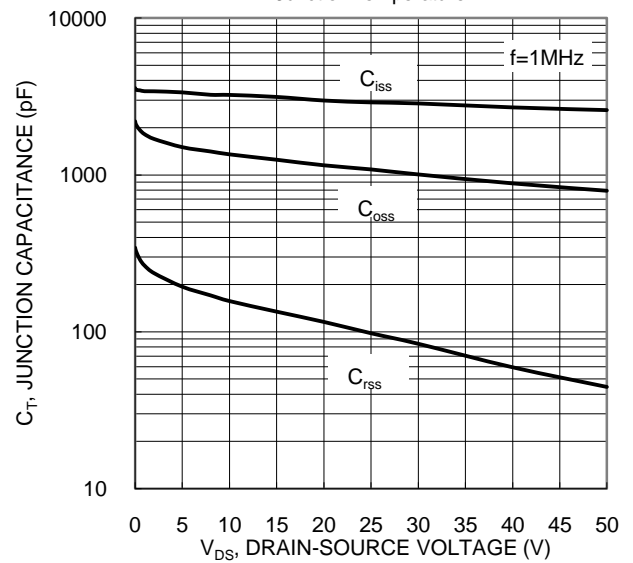
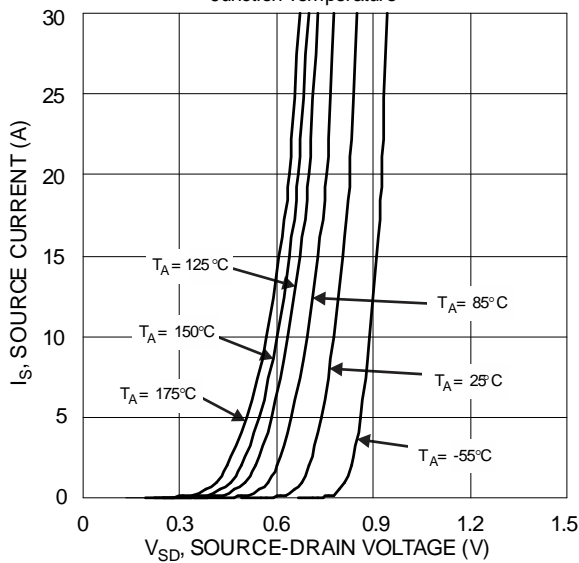
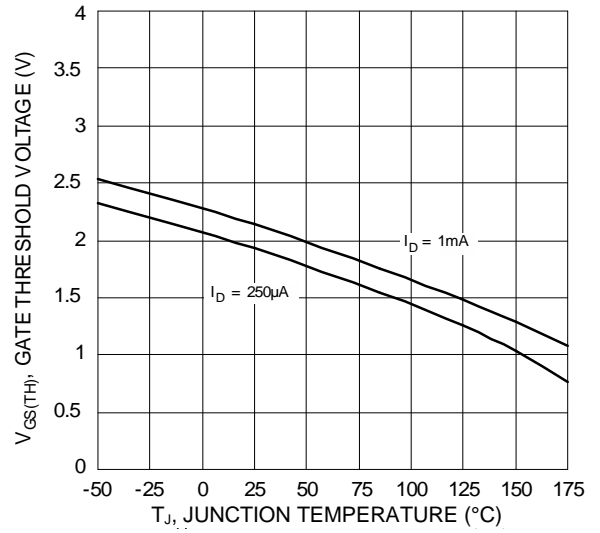
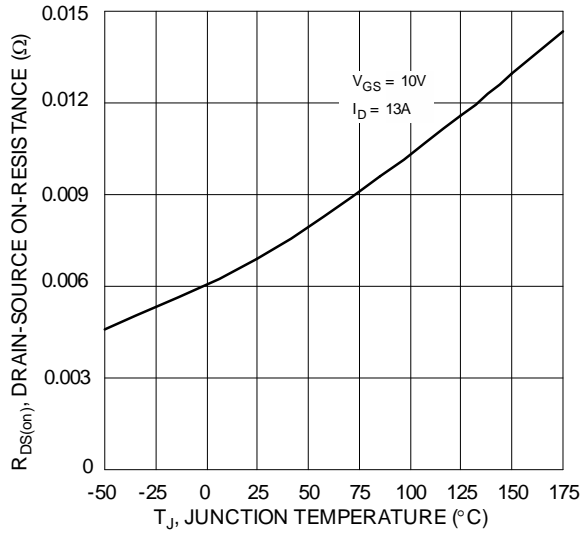
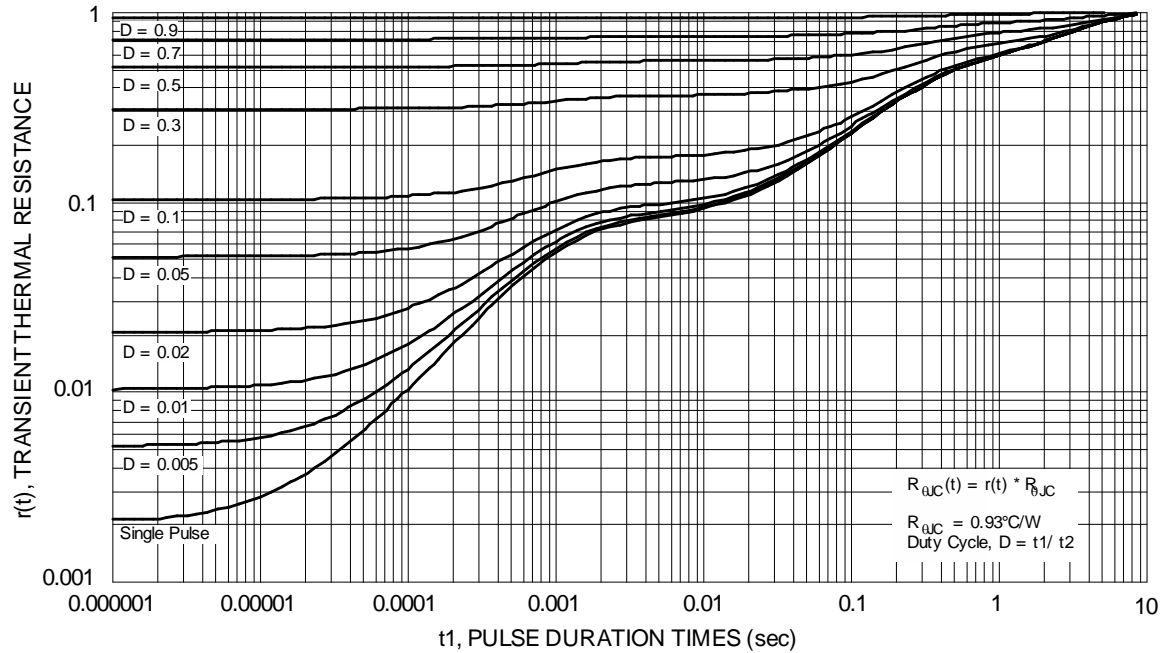


Figure 6 On-Resistance Variation with Junction Temperature

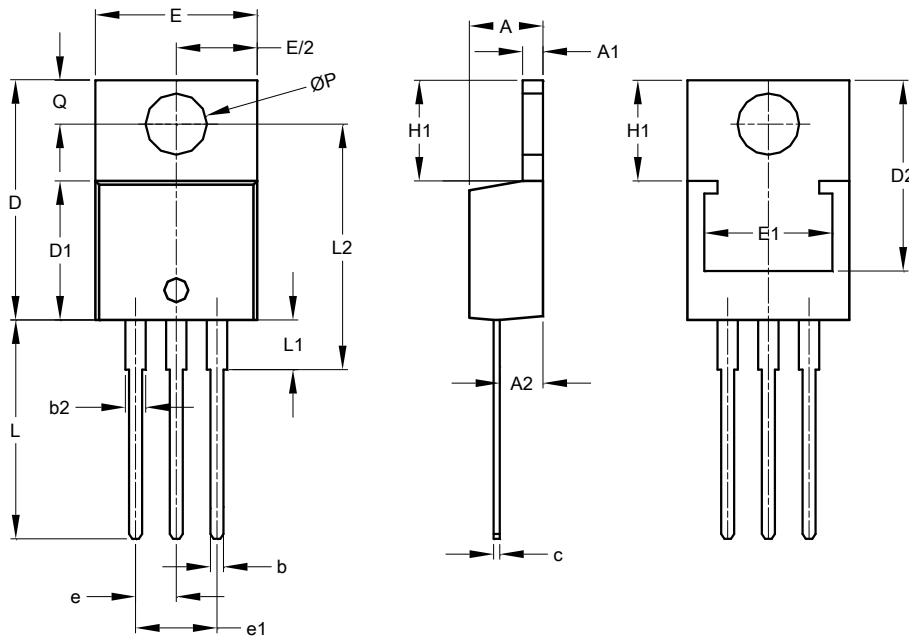




Package Outline Dimensions

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

TO220AB



TO220AB			
Dim	Min	Max	Typ
A	3.56	4.82	-
A1	0.51	1.39	-
A2	2.04	2.92	-
b	0.39	1.01	0.81
b2	1.15	1.77	1.24
c	0.356	0.61	-
D	14.22	16.51	-
D1	8.39	9.01	-
D2	11.45	12.87	-
e	-	-	2.54
e1	-	-	5.08
E	9.66	10.66	-
E1	6.86	8.89	-
H1	5.85	6.85	-
L	12.70	14.73	-
L1	-	6.35	-
L2	15.80	16.20	16.00
P	3.54	4.08	-
Q	2.54	3.42	-
All Dimensions in mm			

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