

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

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V _{DSS}	60	V
Gate-Source Voltage			V _{GSS}	±20	V
Continuous Drain Current (Note 6) V _{GS} = 10V	Steady State	T _A = +25°C T _A = +70°C	I _D	8.8 7.1	A
	t<10s	T _A = +25°C T _A = +70°C	I _D	11.4 9.1	A
Maximum Continuous Body Diode Forward Current (Note 6)			I _S	3	A
Pulsed Drain Current (10μs Pulse, Duty Cycle = 1%)			I _{DM}	50	A
Avalanche Current (Note 7) L = 1mH			I _{AS}	8	A
Avalanche Energy (Note 7) L = 1mH			E _{AS}	32	mJ

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Total Power Dissipation (Note 5)	T _A = +25°C	P _D	1.1	W
	T _A = +70°C		0.7	
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	R _{θJA}	108	°C/W
	t < 10s		65	
Total Power Dissipation (Note 6)	T _A = +25°C	P _D	1.9	W
	T _A = +70°C		1.2	
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	R _{θJA}	66	°C/W
	t < 10s		40	
Thermal Resistance, Junction to Case (Note 6)		R _{θJC}	11.4	
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 8)						
Drain-Source Breakdown Voltage	BV _{DSS}	60	-	-	V	V _{GS} = 0V, I _D = 250μA
Zero Gate Voltage Drain Current T _J = +25°C	I _{DSS}	-	-	1.0	μA	V _{DS} = 48V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	-	-	±100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 8)						
Gate Threshold Voltage	V _{GS(TH)}	1.0	-	3.0	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	-	13	17	mΩ	V _{GS} = 10V, I _D = 8.2A
			20	26		V _{GS} = 4.5V, I _D = 6.7A
Diode Forward Voltage	V _{SD}	-	0.75	-	V	V _{GS} = 0V, I _S = 1A
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C _{iss}	-	869	-	pF	V _{DS} = 30V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{oss}	-	226	-	pF	
Reverse Transfer Capacitance	C _{rss}	-	15	-	pF	
Gate Resistance	R _g	-	1.1	-	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz
Total Gate Charge (V _{GS} = 4.5V)	Q _g	-	6.2	-	nC	V _{DS} = 30V, I _D = 8.2A
Total Gate Charge (V _{GS} = 10V)	Q _g	-	13.9	-	nC	
Gate-Source Charge	Q _{gs}	-	3.0	-	nC	
Gate-Drain Charge	Q _{gd}	-	1.9	-	nC	
Turn-On Delay Time	t _{D(ON)}	-	3.5	-	ns	V _{DD} = 30V, V _{GS} = 10V, I _D = 8.2A, R _g = 6Ω
Turn-On Rise Time	t _R	-	4.6	-	ns	
Turn-Off Delay Time	t _{D(OFF)}	-	10.8	-	ns	
Turn-Off Fall Time	t _F	-	3.5	-	ns	
Reverse Recovery Time	t _{RR}	-	20.3	-	ns	I _F = 8.2A, di/dt = 100A/μs
Reverse Recovery Charge	Q _{RR}	-	11.4	-	nC	I _F = 8.2A, di/dt = 100A/μs

- 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_{AS} and E_{AS} ratings are based on low frequency and duty cycles to keep T_J = +25°C.
 - Short duration pulse test used to minimize self-heating effect.
 - Guaranteed by design. Not subject to product testing.

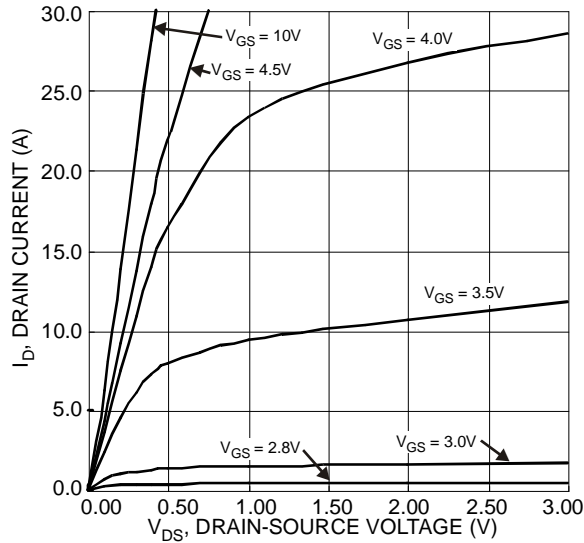


Figure 1 Typical Output Characteristics

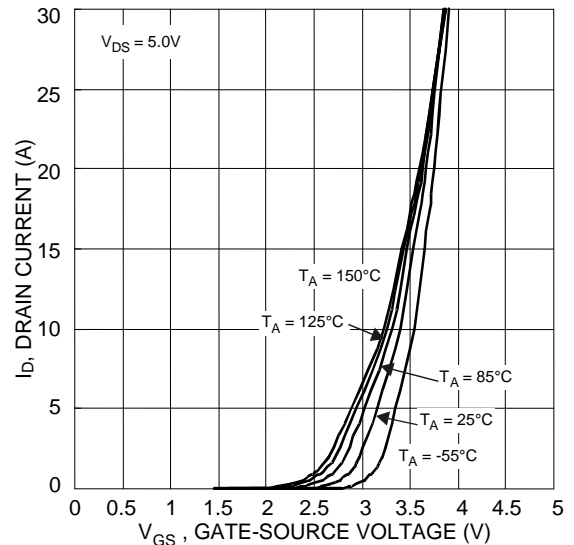


Figure 2 Typical Transfer Characteristics

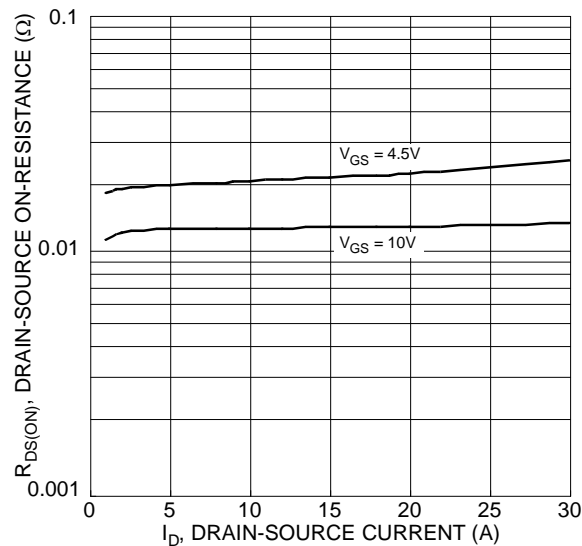


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

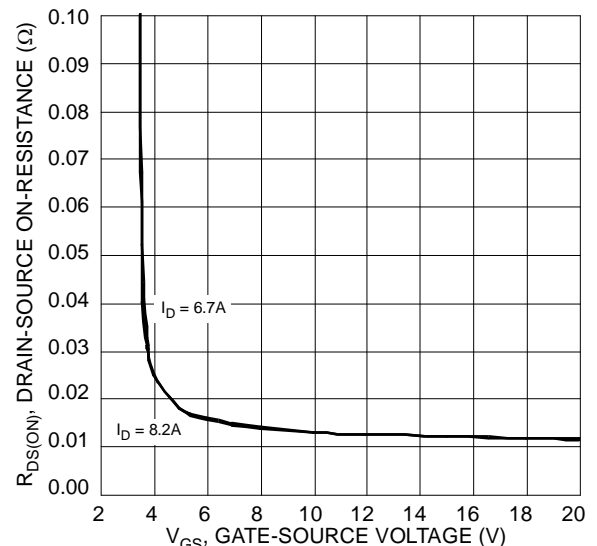


Figure 4 Typical Transfer Characteristics

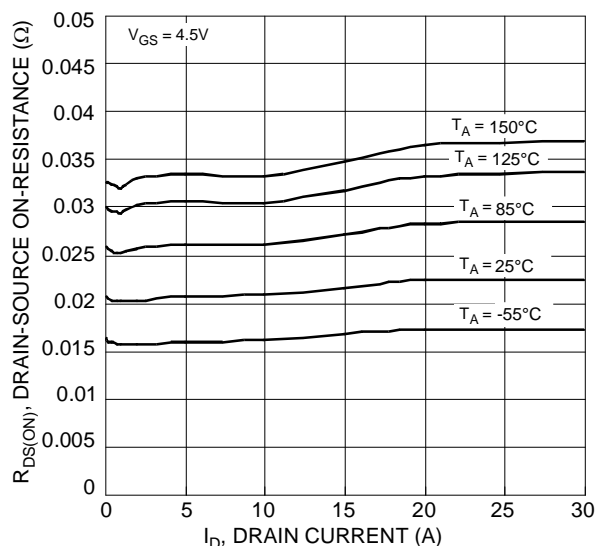


Figure 5 Typical On-Resistance vs. Drain Current and Temperature

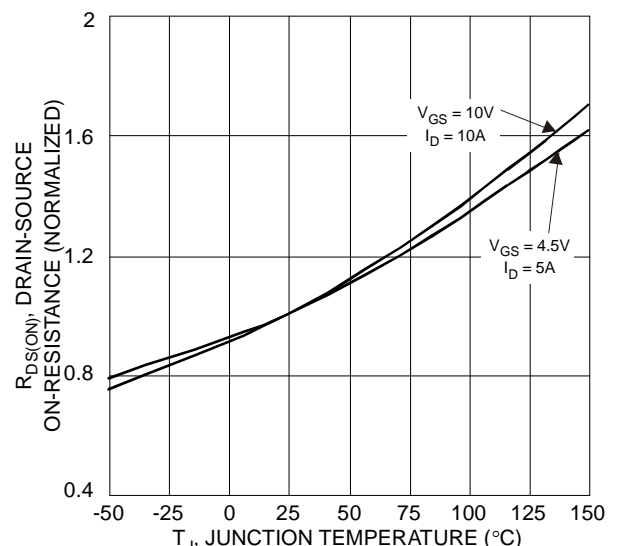
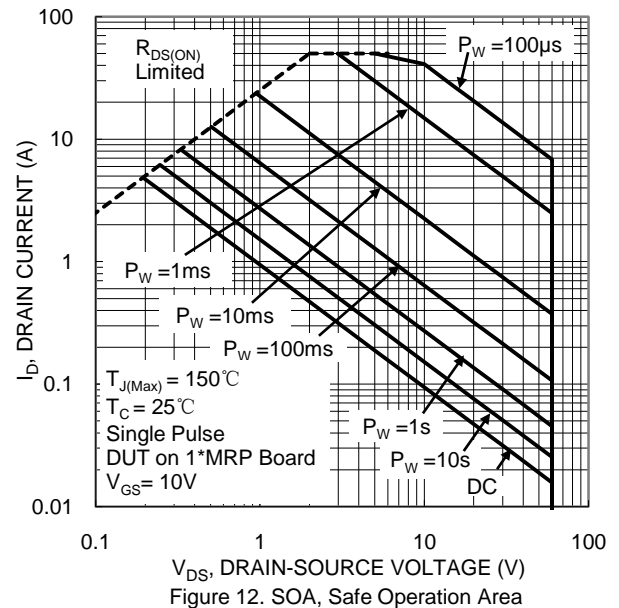
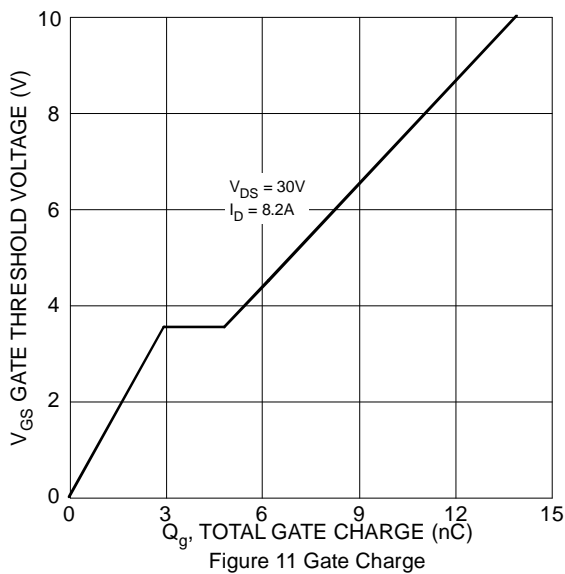
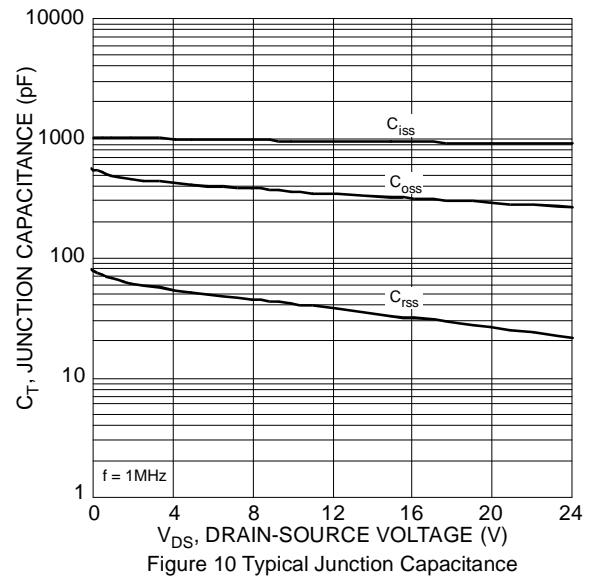
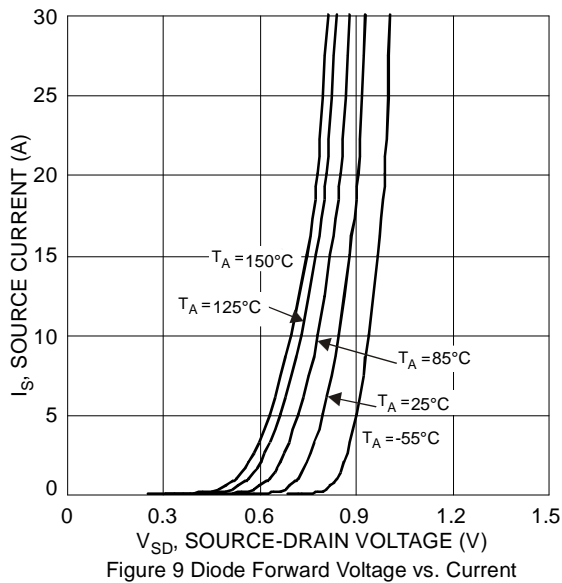
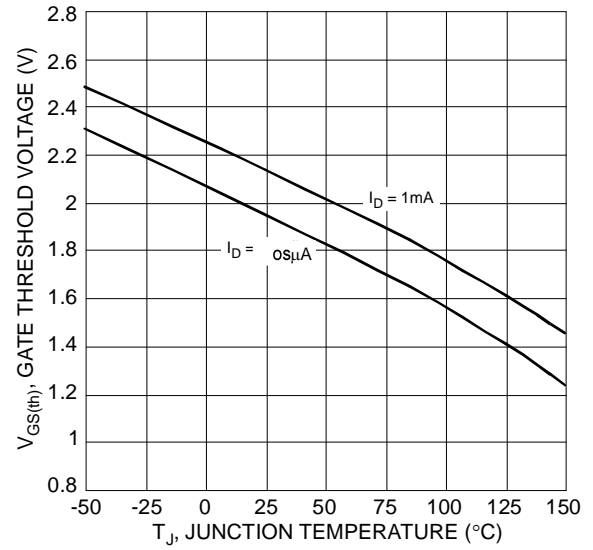
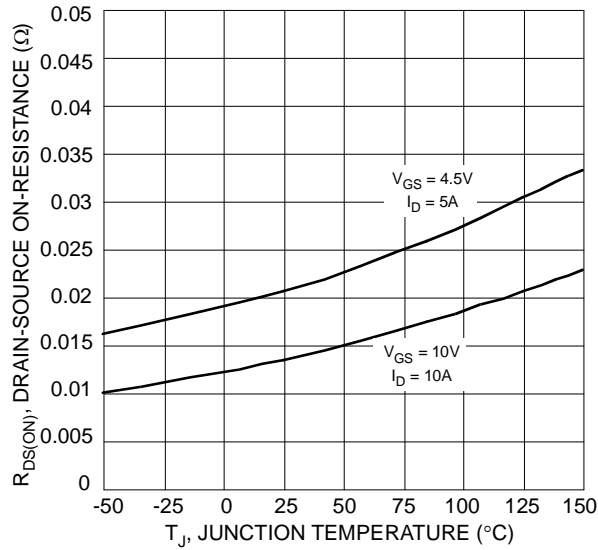
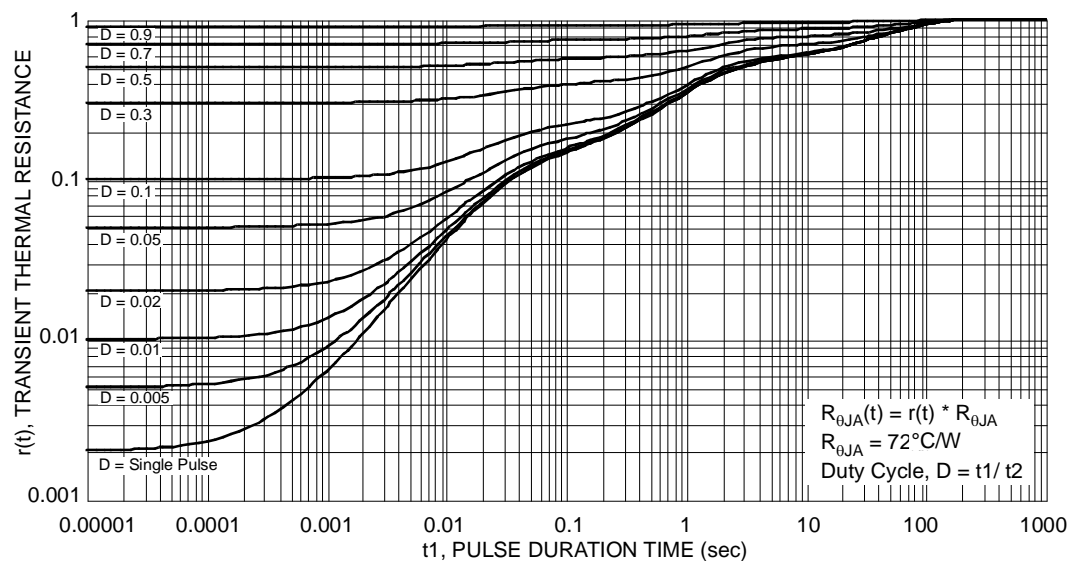


Figure 6 On-Resistance Variation with Temperature

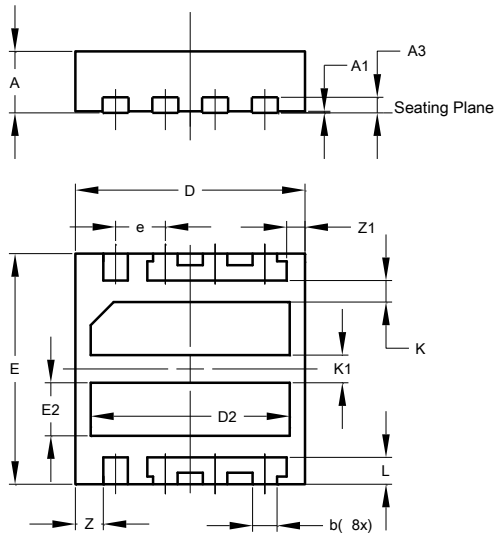




Package Outline Dimensions

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

V-DFN3030-8 (Type H)

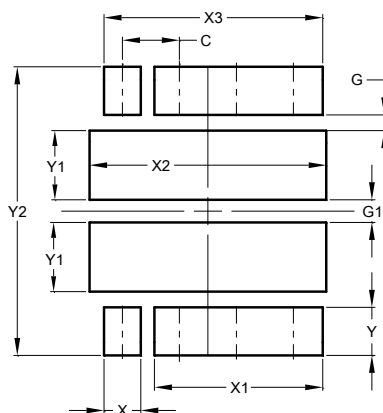


V-DFN3030-8 (Type H)			
Dim	Min	Max	Typ
A	0.75	0.85	0.80
A1	0	0.05	0.02
A3	0.203 BSC		
b	0.27	0.37	0.32
D	2.95	3.05	3.00
D2	2.50	2.70	2.60
e	0.65 BSC		
E	2.95	3.05	3.00
E2	0.59	0.79	0.69
L	0.30	0.40	0.35
K	0.28 BSC		
K1	0.36 BSC		
Z	0.365 BSC		
Z1	0.24 BSC		
All Dimensions in mm			

Suggested Pad Layout

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

V-DFN3030-8 (Type H)



Dimensions	Value (in mm)
C	0.650
G	0.180
G1	0.260
X	0.420
X1	1.920
X2	2.700
X3	2.495
Y	0.550
Y1	0.790
Y2	3.300

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