

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

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V _{DSS}	-20	V
Gate-Source Voltage			V _{GSS}	±10	V
Continuous Drain Current (Note 6) V _{GS} = -4.5V	Steady State	T _A = +25°C T _A = +70°C T _C = +25°C	I _D	-17.5 -14.0 -40	A
Pulsed Drain Current (10μs Pulse, Duty Cycle = 1%)			I _{DM}	-80	A
Maximum Continuous Body Diode Forward Current (Note 6)			I _S	-2.2	A
Avalanche Current (Note 8) L = 0.1mH			I _{AS}	-23	A
Avalanche Energy (Note 8) L = 0.1mH			E _{AS}	28	mJ

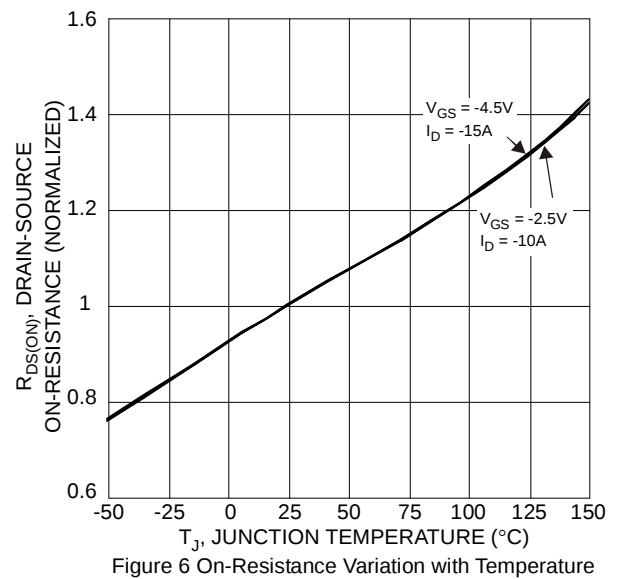
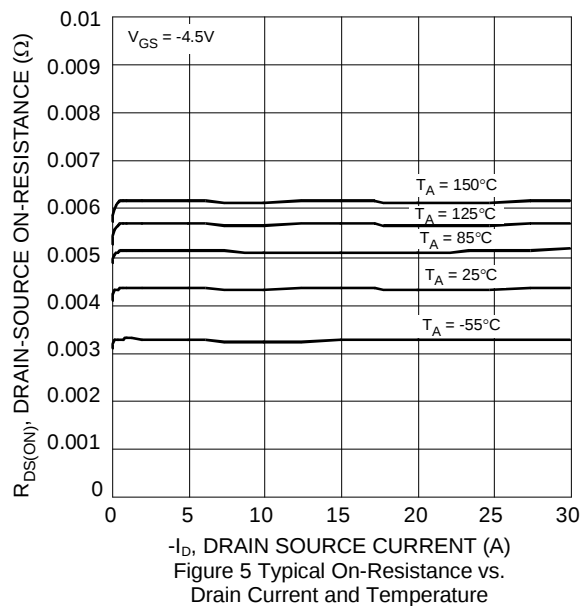
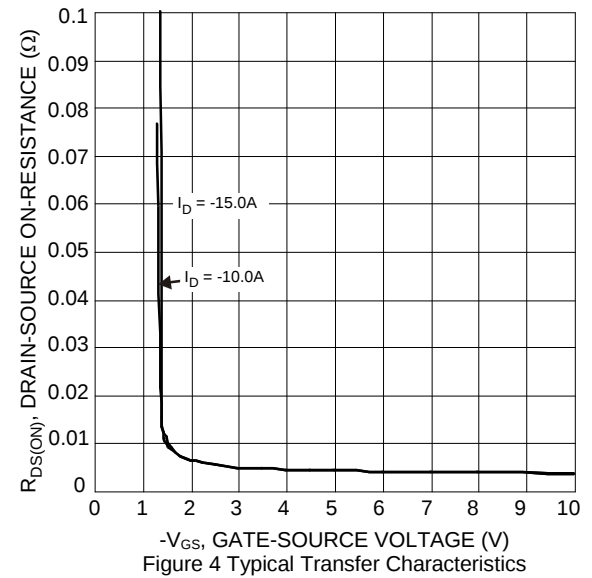
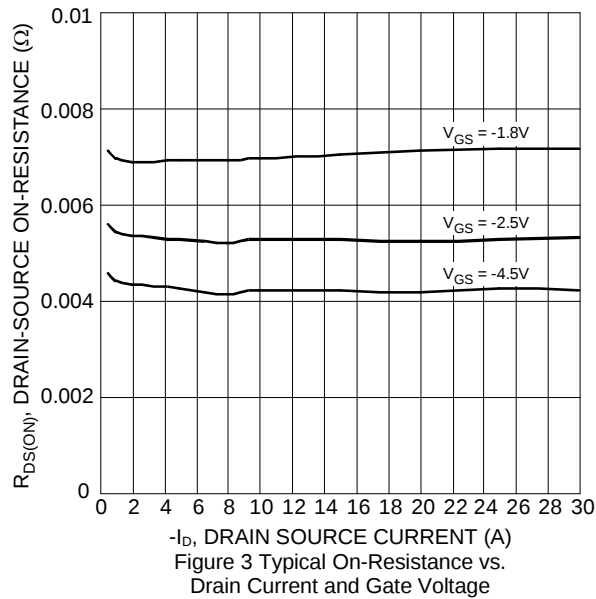
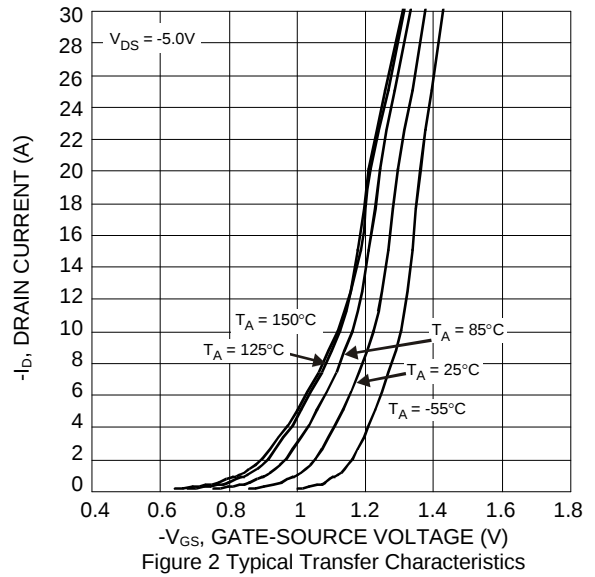
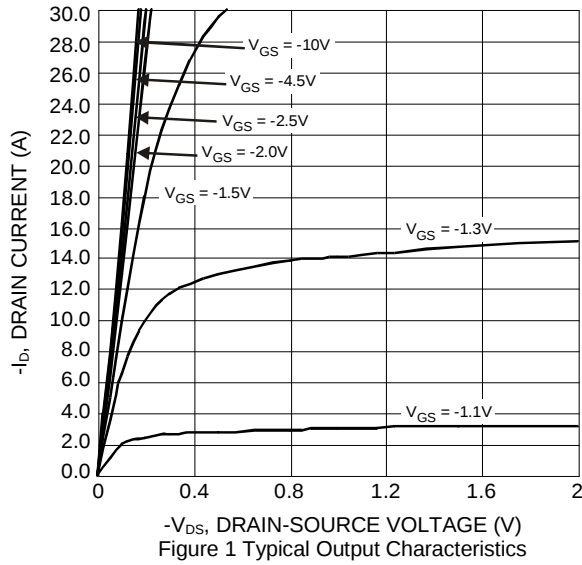
Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

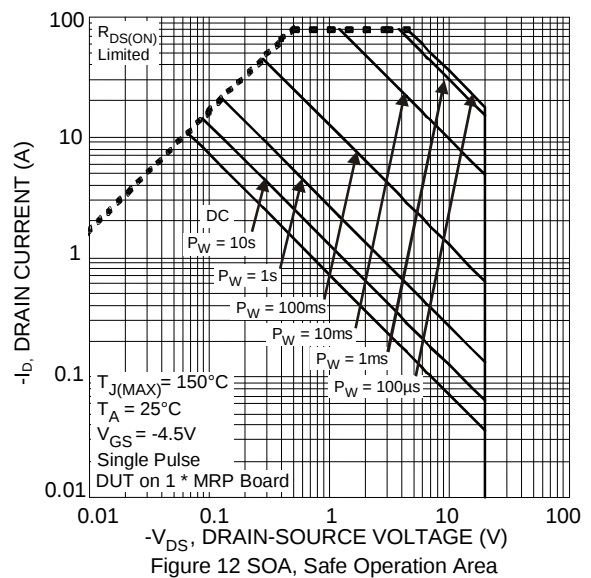
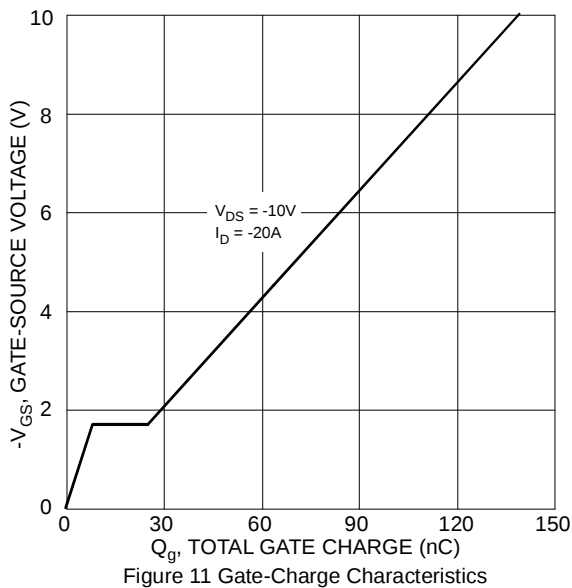
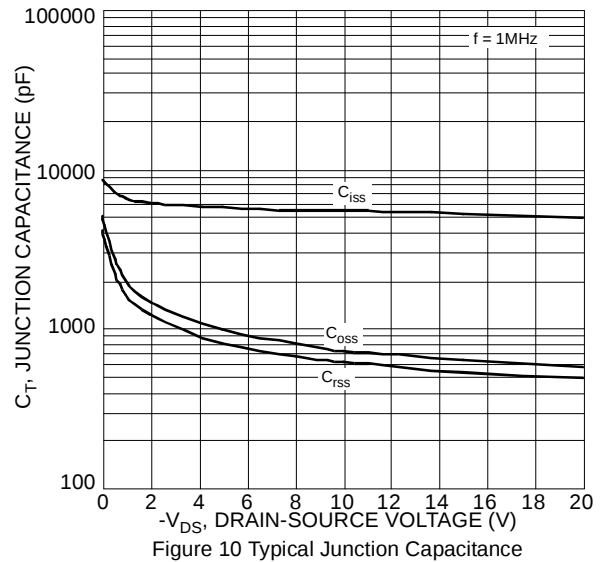
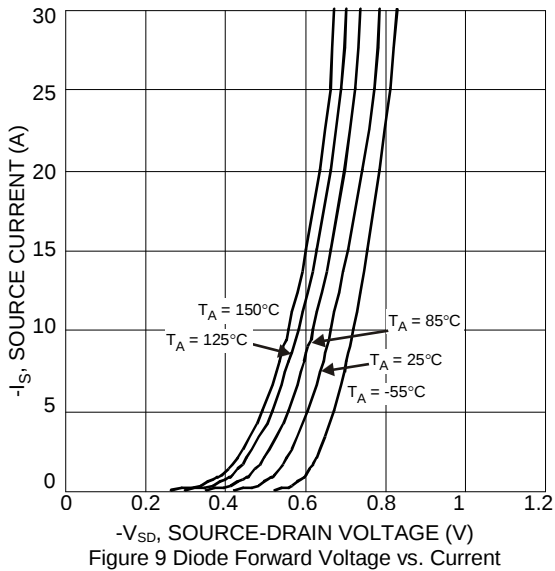
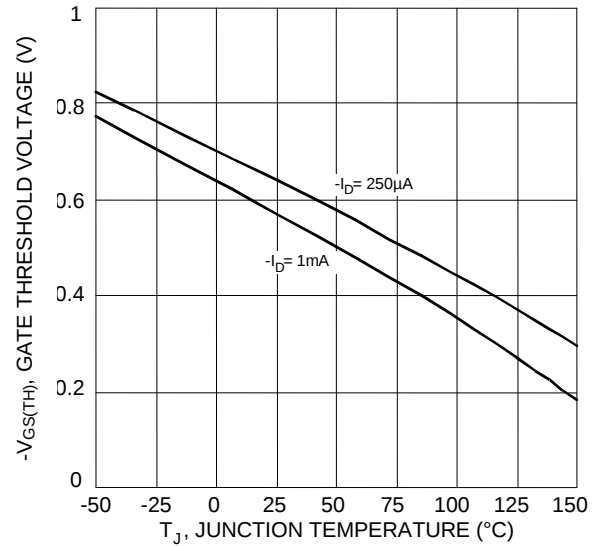
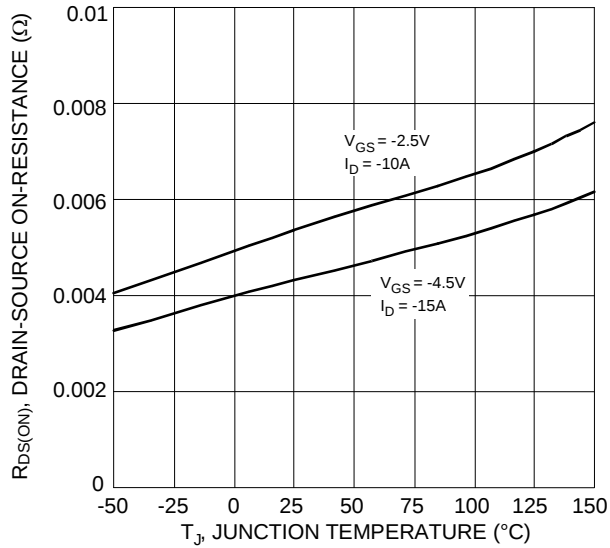
Characteristic		Symbol	Value	Unit
Total Power Dissipation (Note 6)	T _A = +25°C	P _D	2.3	W
	T _C = +25°C		41	
Thermal Resistance, Junction to Ambient	(Note 5)	R _{θJA}	54	°C/W
	(Note 6)		136	
Thermal Resistance, Junction to Case (Note 6)		R _{θJC}	3.0	
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to +150	°C

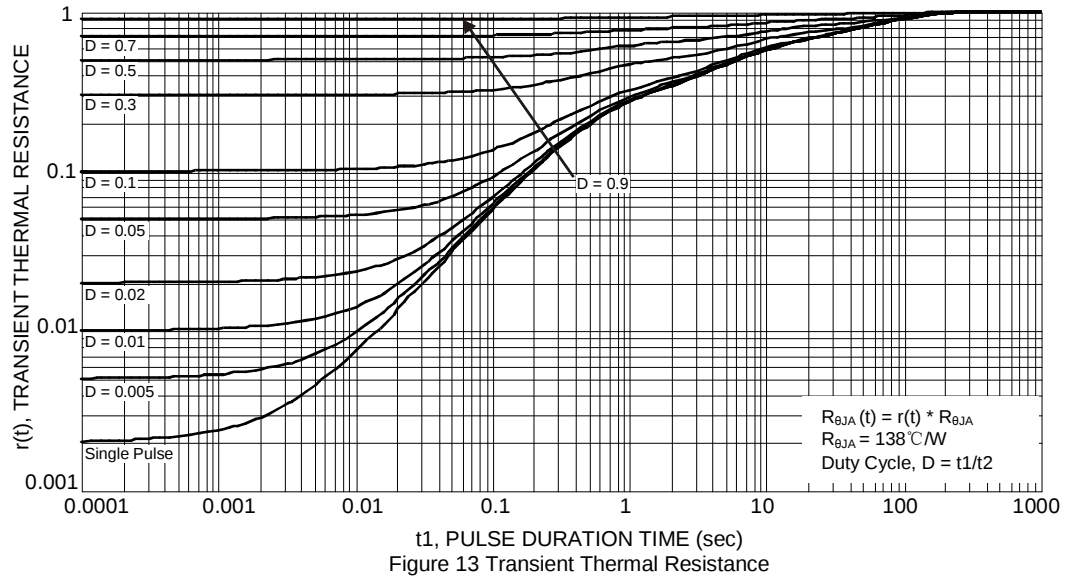
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 9)						
Drain-Source Breakdown Voltage	BV _{DSS}	-20	—	—	V	V _{GS} = 0V, I _D = -250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	-1	μA	V _{DS} = -16V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±100	nA	V _{GS} = ±8V, V _{DS} = 0V
ON CHARACTERISTICS (Note 9)						
Gate Threshold Voltage	V _{GS(TH)}	-0.4	—	-1.0	V	V _{DS} = V _{GS} , I _D = -250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	4.2	5.5	mΩ	V _{GS} = -4.5V, I _D = -15A
		—	5.4	7.5		V _{GS} = -2.5V, I _D = -10A
		—	8	12		V _{GS} = -1.8V, I _D = -1A
		—	12	17		V _{GS} = -1.5V, I _D = -1A
Diode Forward Voltage	V _{SD}	—	-0.7	-1.2	V	V _{GS} = 0V, I _S = -10A
DYNAMIC CHARACTERISTICS (Note 10)						
Input Capacitance	C _{ISS}	—	5404	7500	pF	V _{DS} = -10V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{OSS}	—	728	1000		
Reverse Transfer Capacitance	C _{RSS}	—	612	900		
Gate Resistance	R _g	—	3.8	8	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1.0MHz
Total Gate Charge (V _{GS} = -4.5V)	Q _g	—	64	100	nC	V _{DD} = -10V, I _D = -20A
Total Gate Charge (V _{GS} = -10V)	Q _g	—	140	200		
Gate-Source Charge	Q _{gs}	—	8.5	15		
Gate-Drain Charge	Q _{gd}	—	17	30		
Turn-On Delay Time	t _{D(ON)}	—	9.1	20	ns	V _{GS} = -4.5V, V _{DD} = -10V, R _g = 1Ω, I _D = -10A
Turn-On Rise Time	t _r	—	19	35		
Turn-Off Delay Time	t _{D(OFF)}	—	146	220		
Turn-Off Fall Time	t _f	—	104	150		
Reverse Recovery Time (Note 9)	t _{RR}	—	61	100	ns	I _F = -10A, di/dt = 100A/μs
Reverse Recovery Charge (Note 9)	Q _{RR}	—	44	70	nC	I _F = -10A, di/dt = 100A/μs

- Notes:
6. R_{θJA} is determined with the device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate. R_{θJC} is guaranteed by design while R_{θJA} is determined by the user's board design.
 7. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
 8. UIS in production with L = 0.1mH, T_J = +25°C.
 9. Short duration pulse test used to minimize self-heating effect.
 10. Guaranteed by design. Not subject to product testing.







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Figure 1 consists of two mechanical drawings of a connector. Drawing (a) is a top view showing a rectangular component with a central horizontal slot. Dimensions include A (width of the left flange), D (total width), $D2$ (width of the central slot), $L(4x)$ (length of the central slot), and $A1, A3$ (distances from the seating plane to the ends of the central slot). Drawing (b) is a side view showing the profile of the component. Dimensions include E (total height), $E2$ (height of the bottom flange), $E3$ (height of the central slot), $E4$ (height of the top flange), $L1(3x)$ (length of the bottom flange), $z(4x)$ (width of the bottom flange), b (width of the central slot), and a (width of the top flange). Labels include 'Pin #1 ID' pointing to a specific feature, 'Seating Plane' indicating the reference surface, and '8' indicating a specific feature.

PowerDI3333-8			
Dim	Min	Max	Typ
A	0.75	0.85	0.80
A1	0.00	0.05	0.02
A3	—	—	0.203(3)
b	0.27	0.37	0.32
b2	0.15	0.25	0.20
D	3.25	3.35	3.30
D2	2.22	2.32	2.27
E	3.25	3.35	3.30
E2	1.56	1.66	1.61
E3	0.79	0.89	0.84
E4	1.60	1.70	1.65
e	—	—	0.65
L	0.35	0.45	0.40
L1	—	—	0.39
z	—	—	0.515
All Dimensions in mm			

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Dimensions	Value (in mm)
C	0.650
X	0.420
X1	0.420
X2	0.230
X3	2.370
Y	0.700
Y1	1.850
Y2	2.250
Y3	3.700
Y4	0.540

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