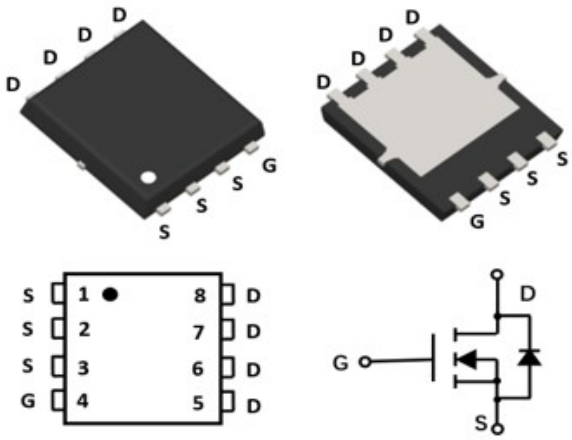
79N100

N-CHANNEL MOSFET

PDFN 5X6



FEATURES

- Low on-resistance
- Fast switching speed
- Easily designed drive circuits
- Easy to parallel

MECHANICAL DATA

- Case: PDFN5x6
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	100	V
Gate-source voltage	V_{GS}	±20V	V
Continuous drain current	I_D	79	A
Power dissipation	P_D	100	W
Thermal resistance from Junction to ambient	$R_{\theta JA}$	45	°C/W
Junction and Storage temperature	T_J,T_{STG}	-55 ~+150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Off Characteristics						
Drain-Source breakdown voltage	$V_{(BR)DSS}$	100			V	V_{GS}=0V, I_D=250uA
Zero gate voltage drain current	I_{DSS}			1	μA	V_{DS}=80V, V_{GS}=0V
Gate-body leakage current	I_{GSS}			±100	nA	V_{DS}=0V, V_{GS}=±20V
Gate-threshold voltage (note 1)	$V_{GS(th)}$	1.2	1.8	2.5		V_{DS}=20V,I_D=250μA
Drain-source on-resistance (note 1)	$R_{DS(ON)}$		6.8	8	mΩ	V_{GS}=10V, I_D=30A
			10.5	12.5	mΩ	V_{GS}=4.5V, I_D=15A
Dynamic Characteristics						
Input capacitance	C_{iss}		3650		pF	V_{DS}=50V.V_{GS}=0V, f=1MHz
Output capacitance	C_{oss}		320		pF	
Reverse transfer capacitance	C_{rss}		22		pF	
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$		16		nS	V_{DD}=50V. I_D =40A R_g=2Ω
Turn-on rise time	t_r		11		nS	
Turn-off delay time	$t_{d(off)}$		35		nS	
Turn-off fall time	t_f		9		nS	

Note:1. Pulse test ; Pulse width ≤300μs, Duty cycle ≤ 2% .

Typical Characteristics

Figure 1. Output Characteristics

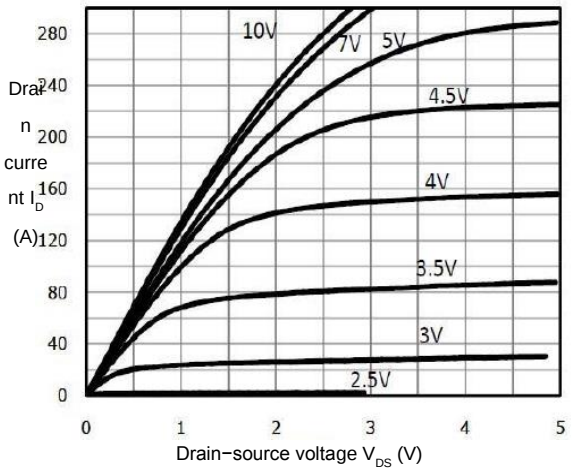


Figure 2. Transfer Characteristics

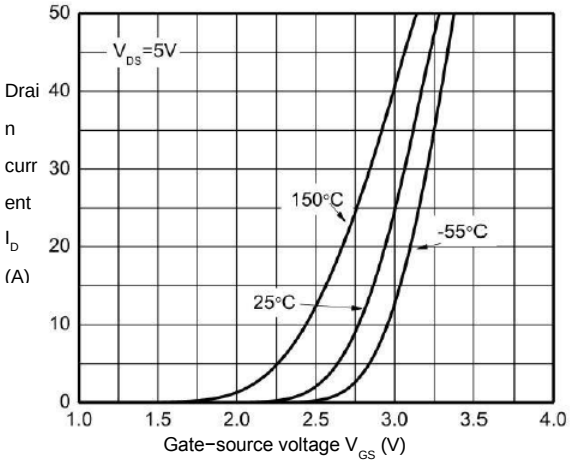


Figure 3. On-Resistance vs. Drain Current

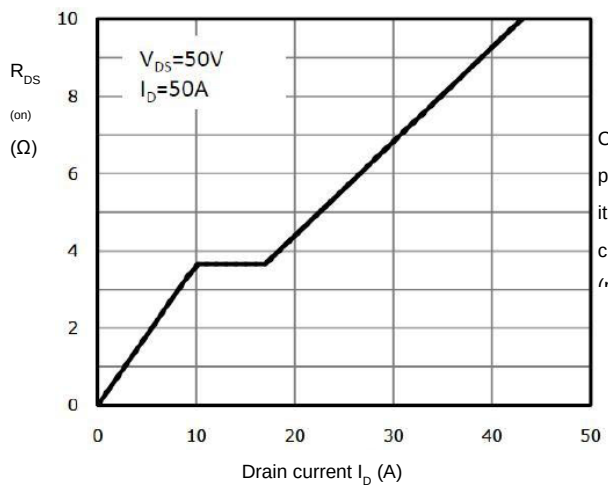


Figure 4. Capacitance Characteristics

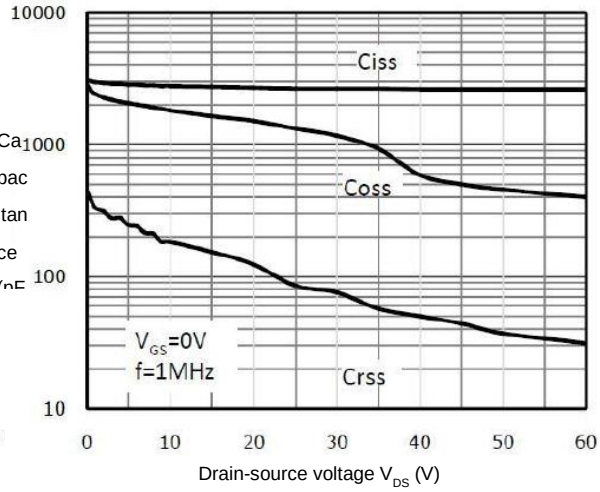


Figure 5. Gate Charge Characteristics

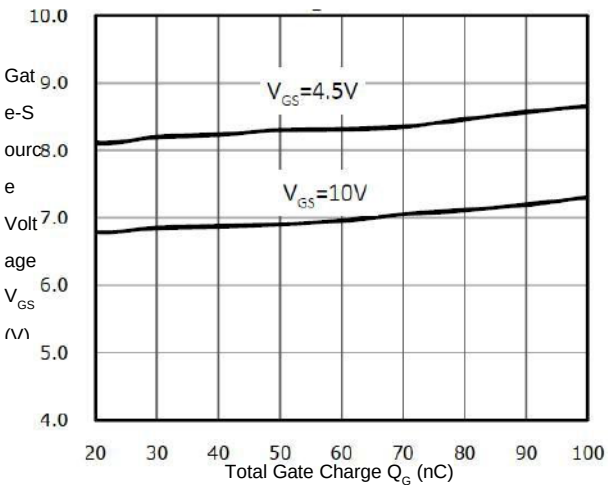
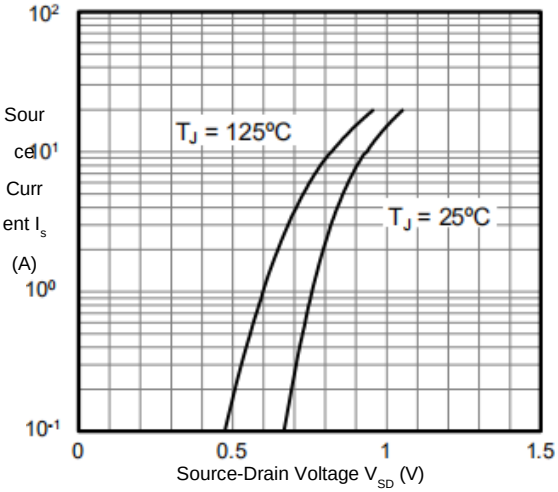


Figure 6. Body Diode Forward Voltage



Typical Characteristics

Figure 7. Breakdown Voltage vs. Temperature

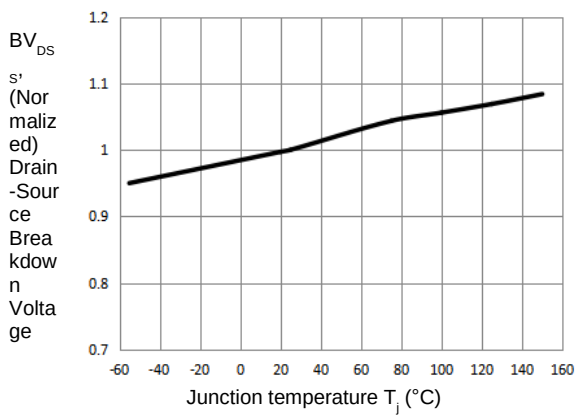


Figure 8. On-Resistance vs. Temperature

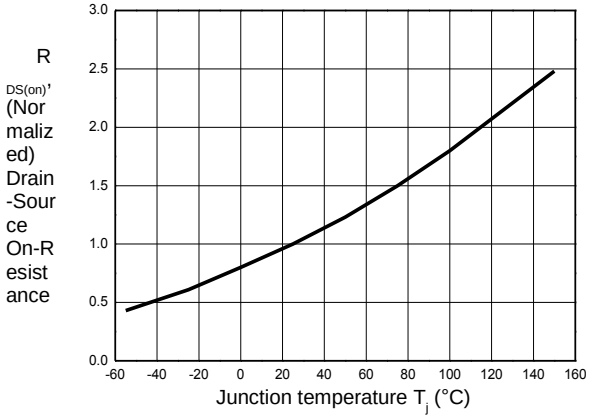


Figure 9. Transient Thermal Impedance

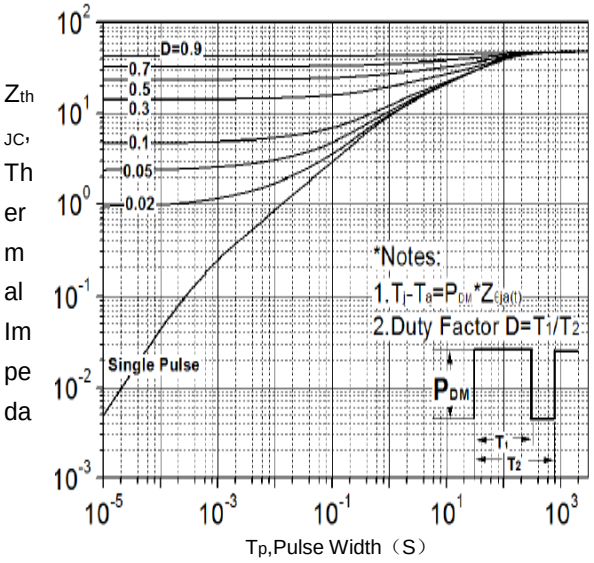
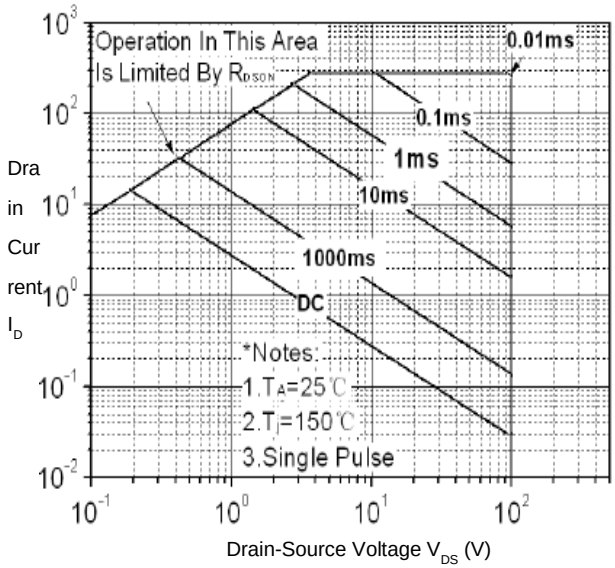
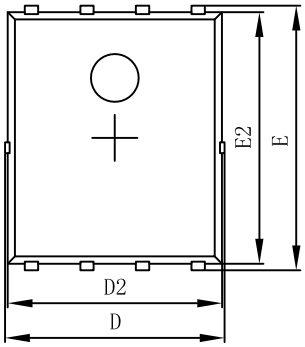


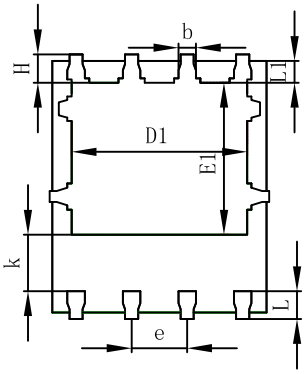
Figure 10. Maximum Safe Operating Area



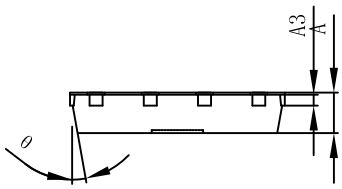
PDFN5X6 Package information



Top View



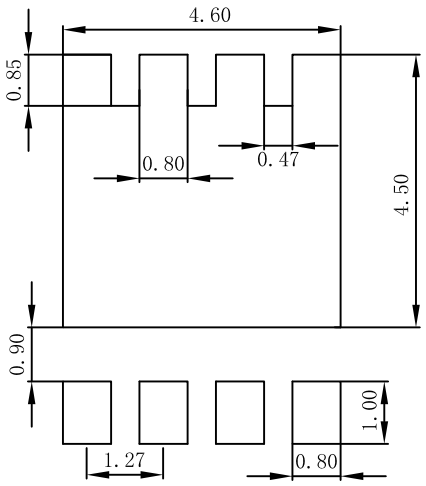
Bottom View



Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

PDFN 5x6 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.