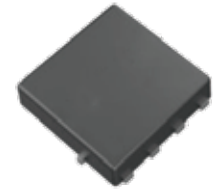


FEATURES

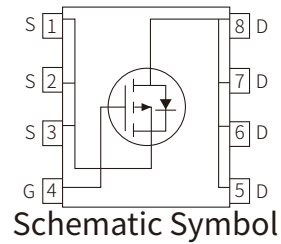
- | Low gate charge
- | Low Ciss
- | Fast switching
- | 100% avalanche tested
- | Improved dv/dt capability



PDFN3x3-8L

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current (Package Limited)	$T_c=25^\circ\text{C}$	I_D	-55	A
	$T_c=100^\circ\text{C}$		-33	A
Pulsed Drain Current(Note1)		I_{DM}	-160	A
Total Power Dissipation $T_c=25^\circ\text{C}$		P_D	25	W
Thermal resistance, junction - case		$R_{th(ch-c)}$	5	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate- Source Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$			± 100	nA
Drain-to-Source Leakage Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.65	-1.0	V
Static Drain-source On Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_{DS}=-15A$		5.8	7.6	m Ω
		$V_{GS}=-2.5V, I_{DS}=-10A$		7.8	10.2	m Ω
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		6590		pF
Output Capacitance	C_{oss}			724		pF
Reverse Transfer Capacitance	C_{rss}			487		pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-10V, R_G=10\Omega$ $V_{GS}=-10V, R_L=1.3\Omega$		8.2		ns
Turn-on Rise Time	t_r			3.5		ns
Turn-Off Delay Time	$t_{d(off)}$			263		ns
Turn-off Fall Time	t_f			8		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, I_D=-12A$ $V_{GS}=-4.5V$		97		nC
Gate-Source Charge	Q_{gs}			17		nC
Gate-Drain Charge	Q_{gd}			12		nC
Reverse diode						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-9A$			-1.2	V
Reverse Recovery Time	t_{rr}	$V_D=-30V, I_F=-1A$ $di/dt=100A/\mu s, (Note2)$		135		ns
Reverse Recovery Charge	Q_{rr}			122		nC

Notes

1. Repetitive Rating:pulse width limited by maximum junction temperature.
2. Pulse width $\leq 300\mu s$,duty cycle $\leq 2\%$.

PARAMETER CHARACTERISTIC CURVE

Figure 1: Typical Output Characteristics

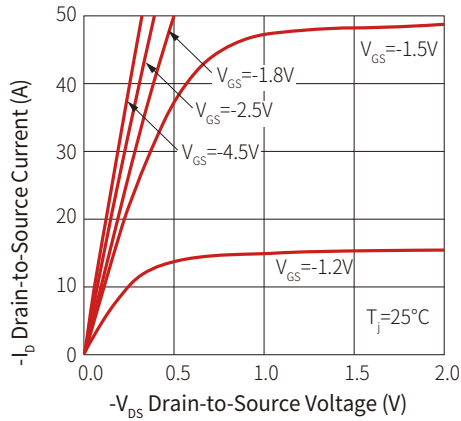


Figure 2: Typical Gate Charge vs Gate to Source Voltage

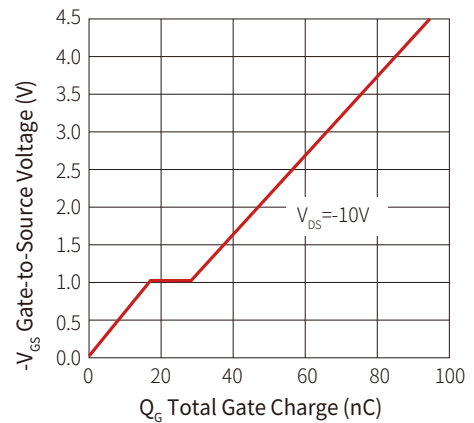


Figure 3: Typical Body Diode Transfer Characteristics

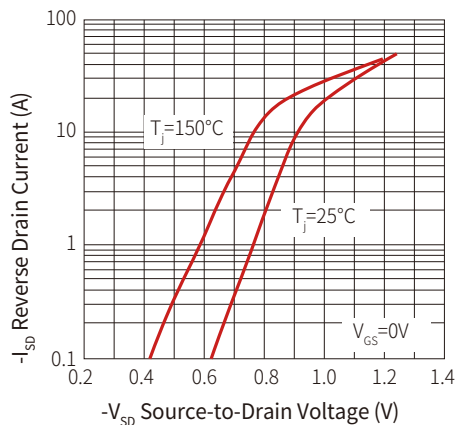


Figure 4: Typical Capacitance vs Drain to Source Voltage

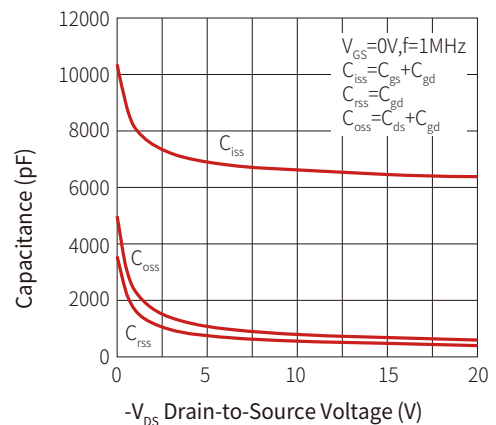


Figure 5: Typical Breakdown Voltage vs Junction Temperature

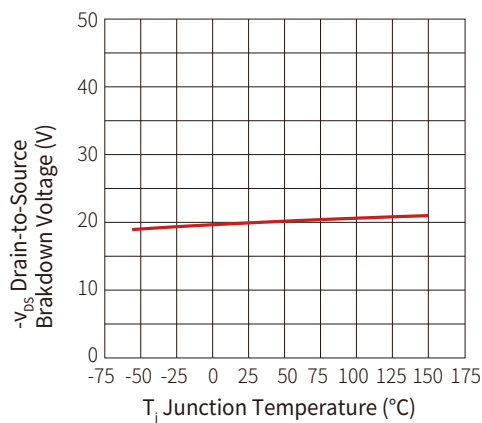


Figure 6: Typical Drain to Source on Resistance vs Junction Temperature

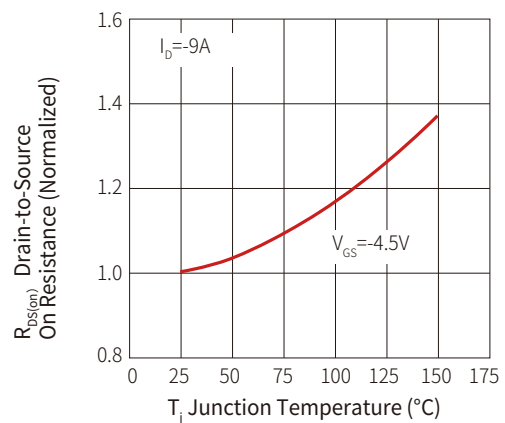




Figure 7: Maximum Forward Bias Safe Operating Area

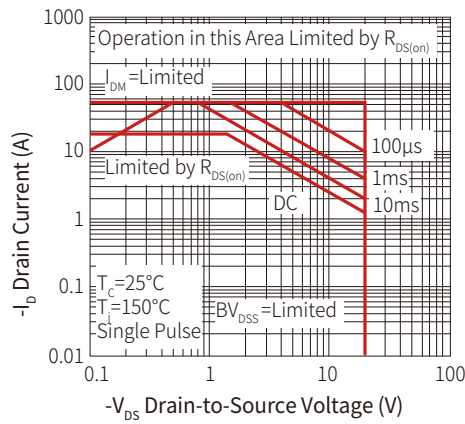


Figure 8: Typical Drain to Source ON Resistance vs Drain Current

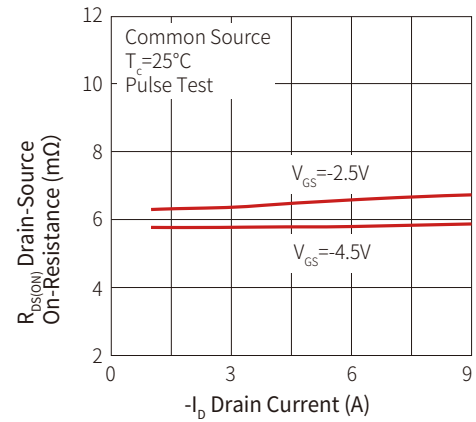


Figure 9: Typical Threshold Voltage vs Case Temperature

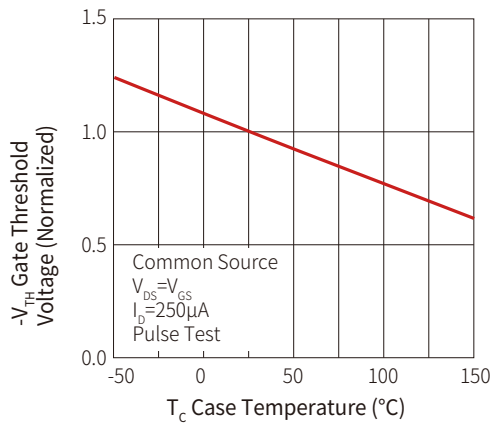


Figure 10: Typical Transfer Characteristics

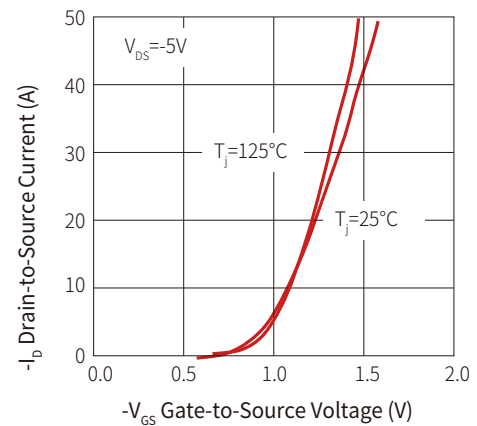


Figure 11: Maximum Power Dissipation vs Case Temperature

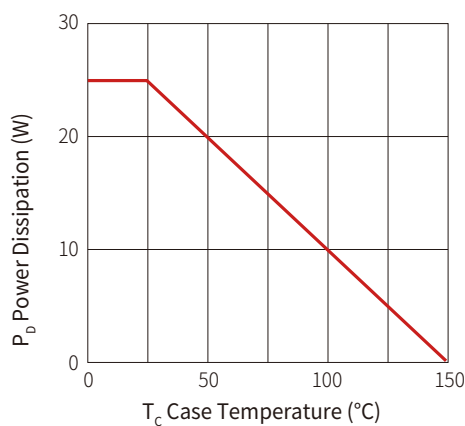
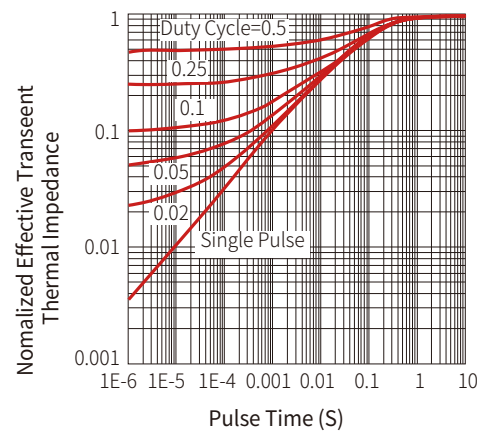
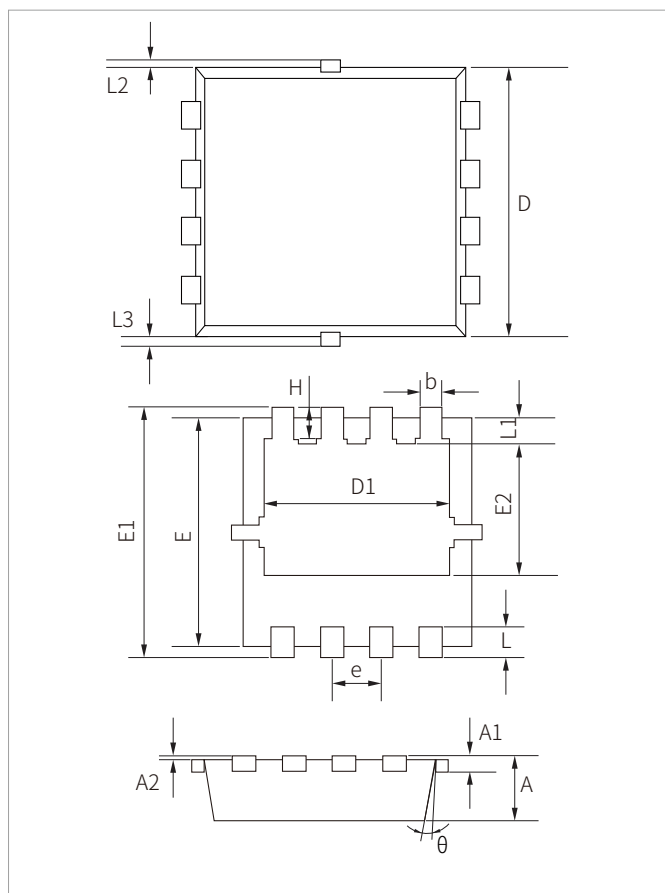


Figure 12: Maximum Effective Thermal Impedance, Junction to Case



PDFN3x3-8L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152REF		0.006REF	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SPM55P02Q	PDFN3×3-8L	 55P02 XXXX	5000PCS	13"

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