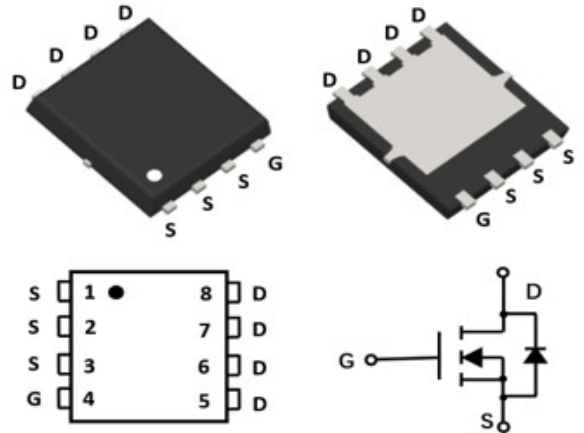


**MOSFET (N-CHANNEL)**
**FEATURES**

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

**PDFN 5X6**

**MECHANICAL DATA**

- Case: PDFN5x6
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.016 grams (approximate)

**MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)**

Symbol	Parameter	Rating	Units
V <sub>DS</sub>	Drain-Source Voltage	30	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub> @T <sub>C</sub> =25°C	Continuous Drain Current <sup>1</sup>	50	A
I <sub>D</sub> @T <sub>C</sub> =100°C	Continuous Drain Current <sup>1</sup>	30	A
I <sub>DM</sub>	Pulsed Drain Current <sup>2</sup>	112	A
EAS	Single Pulse Avalanche Energy <sup>3</sup>	24	mJ
I <sub>AS</sub>	Avalanche Current	22	A
P <sub>D</sub> @T <sub>C</sub> =25°C	Total Power Dissipation <sup>4</sup>	37	W
T <sub>STG</sub>	Storage Temperature Range	-55 to 150	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	30	---	---	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance <sup>2</sup>	V <sub>GS</sub> =10V, I <sub>D</sub> =20A		6.8	8.5	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =20A		9.3	14	mΩ
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	1.0	1.5	3.0	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, T <sub>J</sub> =25°C	---	---	1	uA
		V <sub>DS</sub> =24V, V <sub>GS</sub> =0V, T <sub>J</sub> =125°C	---	---	10	
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	---	---	±100	nA
R <sub>g</sub>	Gate Resistance	V <sub>DS</sub> =0V, V <sub>GS</sub> =0V, f=1MHz	---	1.8	---	Ω
Q <sub>g</sub>	Total Gate Charge (10V)	V <sub>DS</sub> =15V, V <sub>GS</sub> =10V, I <sub>D</sub> =20A	---	9.8	---	nC
Q <sub>gs</sub>	Gate-Source Charge		---	4.2	---	
Q <sub>gd</sub>	Gate-Drain Charge		---	3.6	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =15V, V <sub>GS</sub> =10V, R <sub>G</sub> =3Ω, I <sub>D</sub> =15A	---	4	---	ns
T <sub>r</sub>	Rise Time		---	8	---	
T <sub>d(off)</sub>	Turn-Off Delay Time		---	30	---	
T <sub>f</sub>	Fall Time		---	4	---	
C <sub>ISS</sub>	Input Capacitance	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz	---	940	---	pF
C <sub>OSS</sub>	Output Capacitance		---	130	---	
C <sub>RSS</sub>	Reverse Transfer Capacitance		---	110	---	

MOSFET (N-CHANNEL)

Typical Characteristics

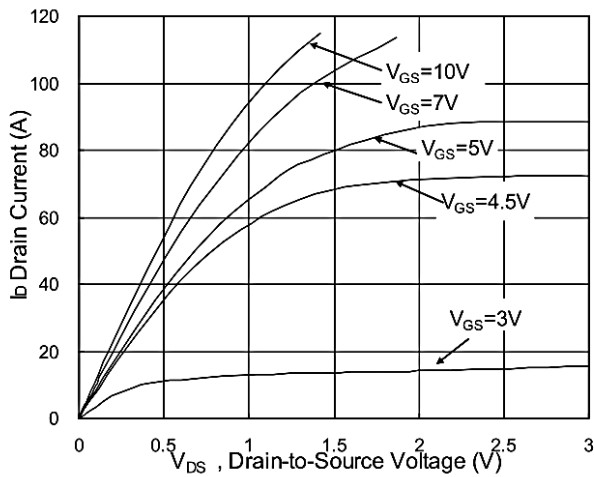


Fig.1 Typical Output Characteristics

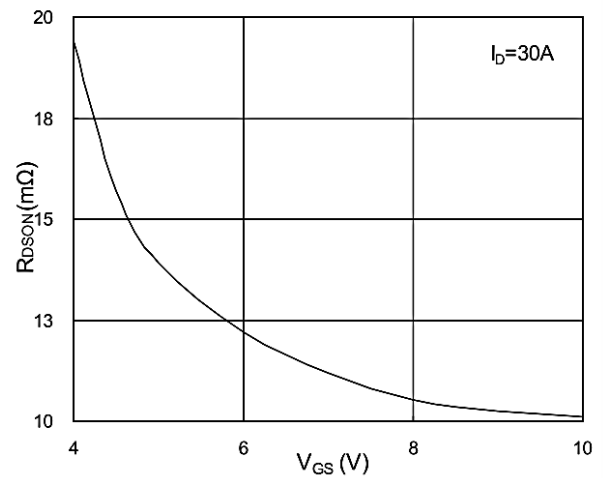


Fig.2 On-Resistance vs. G-S Voltage

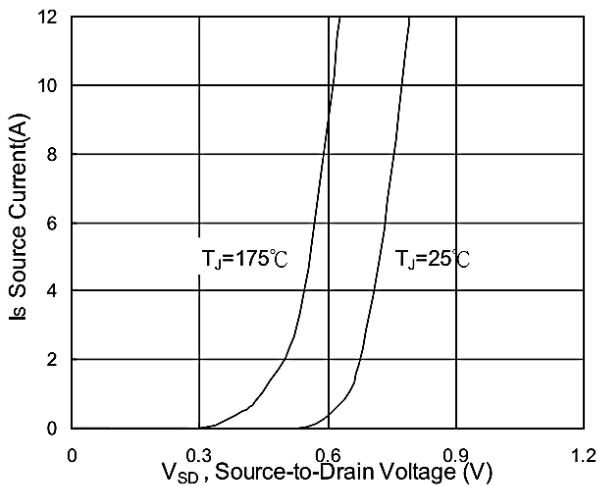


Fig.3 Forward Characteristics of Reverse

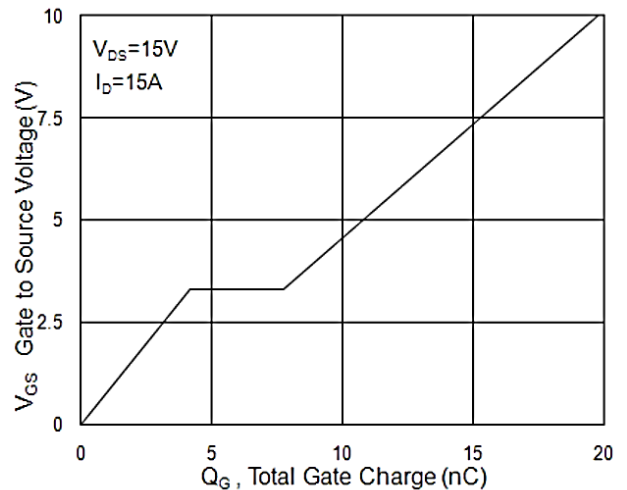


Fig.4 Gate-Charge Characteristics

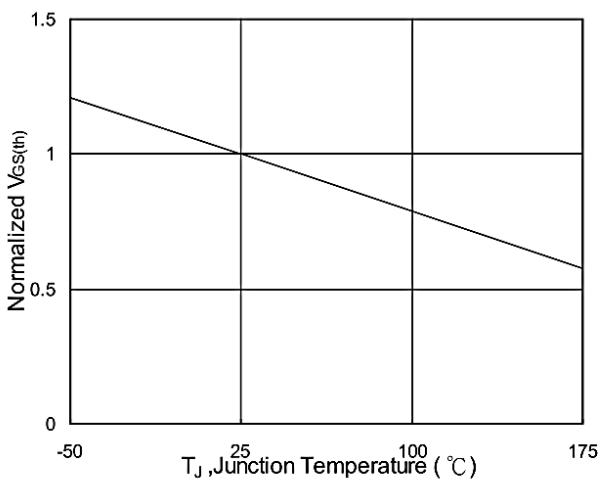


Fig.5 Normalized  $V_{GS(th)}$  vs.  $T_J$

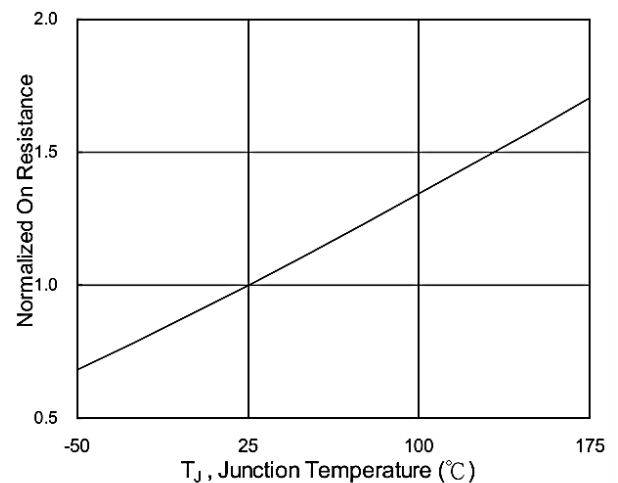
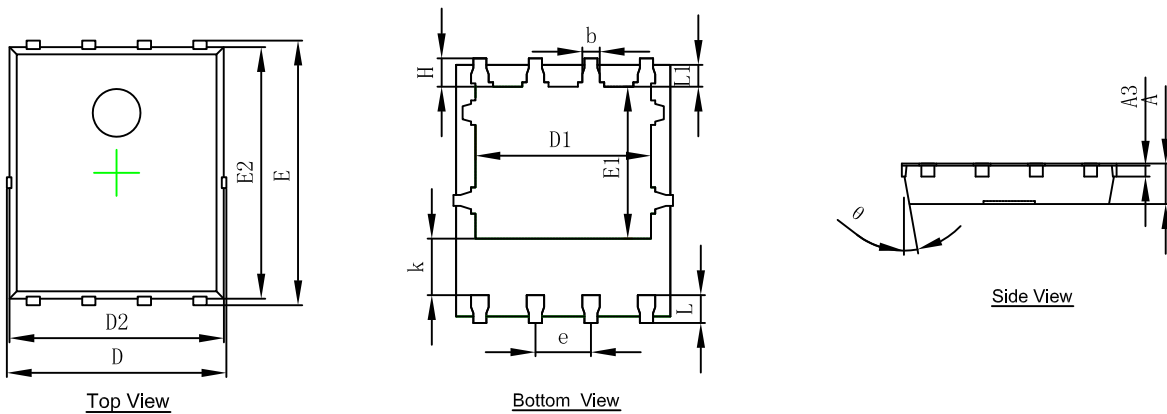


Fig.6 Normalized  $R_{DS(on)}$  vs.  $T_J$

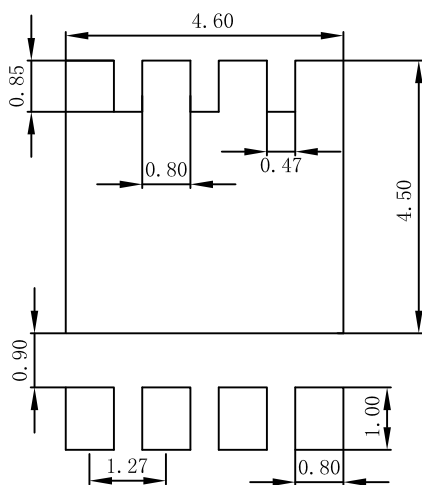
MOSFET (N-CHANNEL)

PDFN5X6 Package information



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°

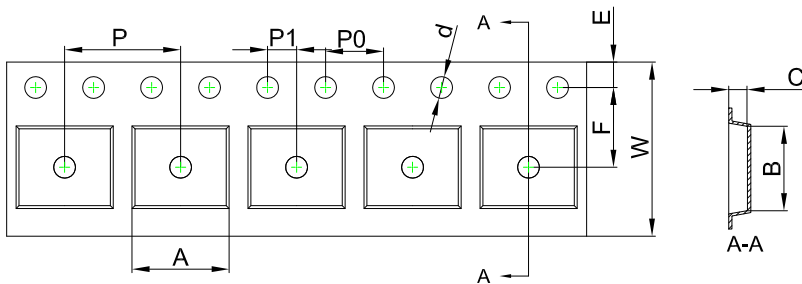
PDFN 5x6 Suggested Pad Layout



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

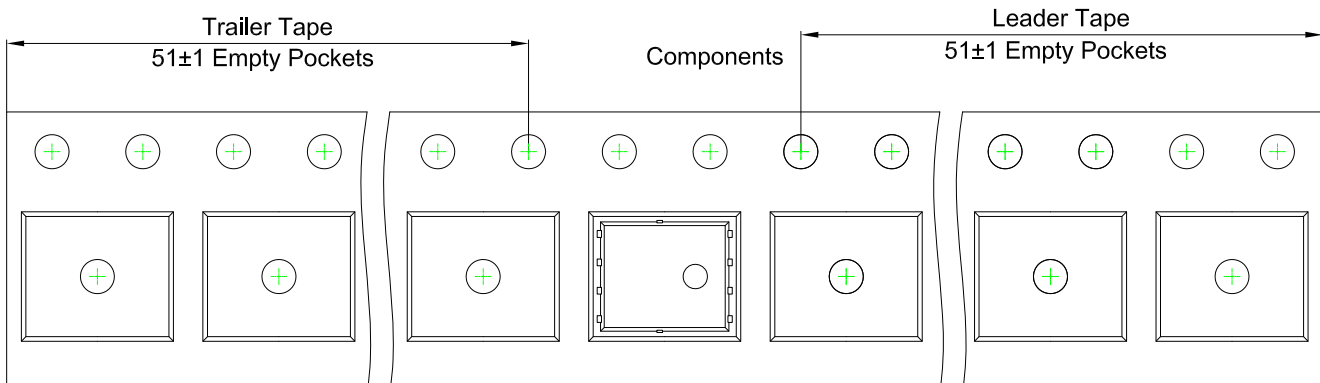
MOSFET (N-CHANNEL)

**PDFN 5x6** Embossed Carrier Tape

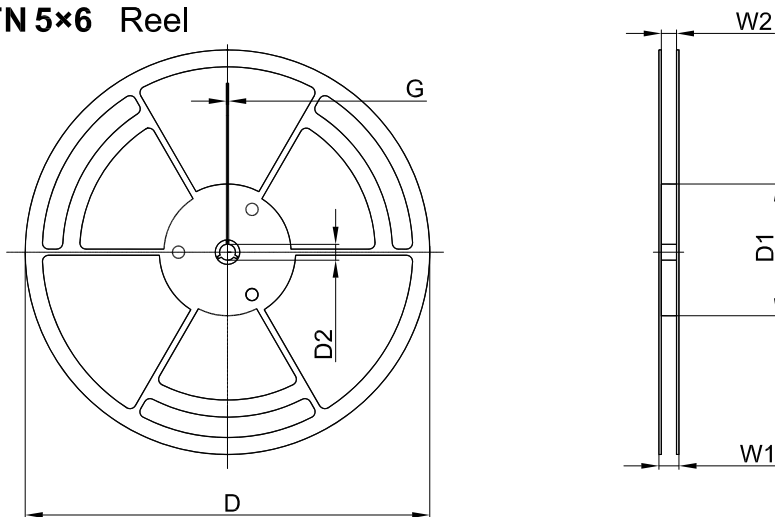


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
<b>PDFN 5x6</b>	6.30	5.30	1.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

**PDFN 5x6** Tape Leader and Trailer



**PDFN 5x6** Reel



Dimensions are in millimeter						
Reel Option	D	D1	D2	G	W1	W2
13" Dia	Ø330.00	100.00	13.00	1.90	17.60	12.40

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
5,000 pcs	13 inch	5,000 pcs	340×336×29	50,000 pcs	353×346×365

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