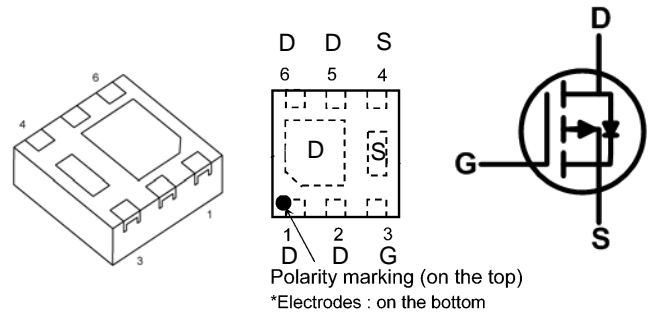


P-Channel Enhancement Mode Power MOSFET
● Features

$V_{DS} = -30V$
 $I_D = -10A$
 $R_{DS(ON)} \leq 21m\Omega (V_{GS} = -10V)$

● General Description

The TPM2030JX is the high cell density trench P-ch MOSFETs, which provide excellent $R_{DS(ON)}$ and gatecharge for most of the synchronous buck converter applications. The TPM2030JX meet the RoHS and Green Product requirement.

● Pin Configurations

● Package Marking and Ordering Information

Product	Package	Marking	Packing
TPM2030JX	DFN2X2-6L	1003 XXYY	3000pcs./7" Reel

● Absolute Maximum Ratings (@TA=25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	-30	V
Gate Source Voltage	V_{GSS}	± 20	V
Drain Current (Continuous) *AC	I_D	TA=25°C	-10
		TA=100°C	-8
Drain Current (Pulse) *B	I_{DM}	-30	A
Power Dissipation	P_D	2.8	W
Operating Temperature/ Storage Temperature	T_J/T_{STG}	-55~150	°C
Thermal Resistance ,Junction-to-Ambient	$R_{\theta JA}$	50	°C/W

P-Channel Enhancement Mode Power MOSFET
● Electrical Characteristics (@TA=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$	--	--	-1	μA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_{DS}=-250\mu A$	-1.0	--	-2.5	V
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	± 100	nA
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-8A$	--	--	21	m Ω
		$V_{GS}=-4.5V, I_D=-6A$	--	--	34	m Ω
Diode Forward Voltage	V_{SD}	$I_{SD}=-1A, V_{GS}=0V$	--	--	-1.0	V
Switching						
Total Gate Charge	Q_g	$V_{GS}=-10V, V_{DS}=-15V, I_D=-8A$	--	12	--	nC
Gate- Source Charge	Q_{gs}		--	1.8	--	nC
Gate- Drain Charge	Q_{gd}		--	3	--	nC
Turn-on Delay Time	$t_{d(on)}$	$V_{GS}=-10V, V_{DS}=-15V, R_{GEN}=3\Omega, R_L=1.8\Omega$	--	7.7	--	ns
Turn-on Rise Time	t_r		--	5.5	--	ns
Turn-off Delay Time	$t_{d(off)}$		--	26.3	--	ns
Turn-off Fall Time	t_f		--	11.5	--	ns
Dynamic						
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=-15V, f=1MHz$	--	530	--	pF
Output Capacitance	C_{oss}		--	114	--	pF
Reverse Transfer Capacitance	C_{rss}		--	75	--	pF

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ C$. The value in any given application depends on the user's specific board design.

B: Repetitive rating, pulse width limited by junction temperature .

C: The current rating is based on the $t < 10s$ junction to ambient thermal resistance rating.



P-Channel Enhancement Mode Power MOSFET

● TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

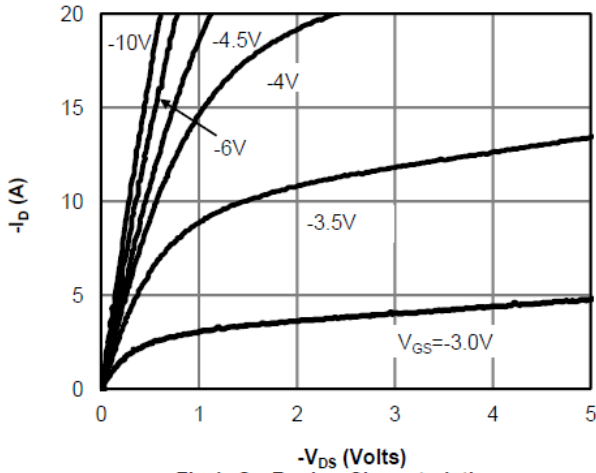


Fig 1: On-Region Characteristics

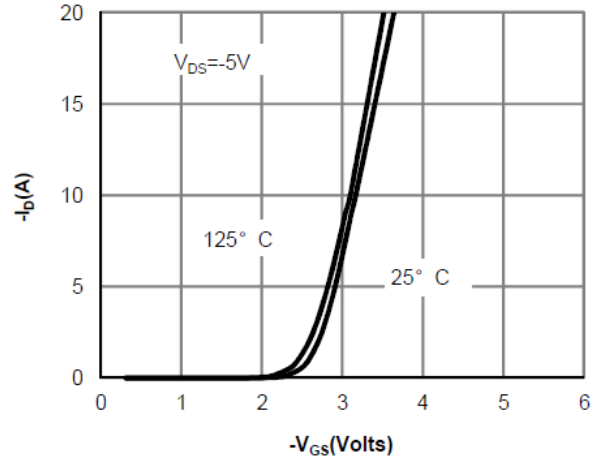


Figure 2: Transfer Characteristics

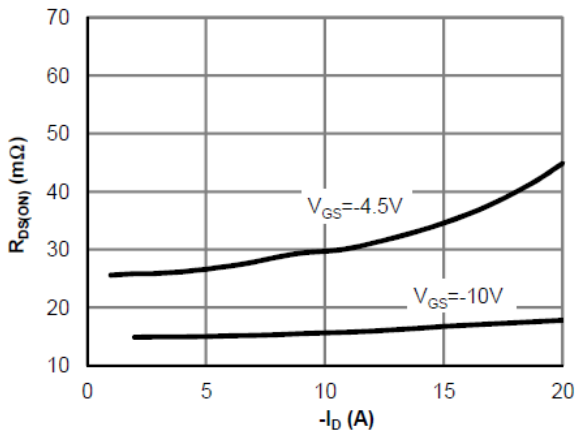


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

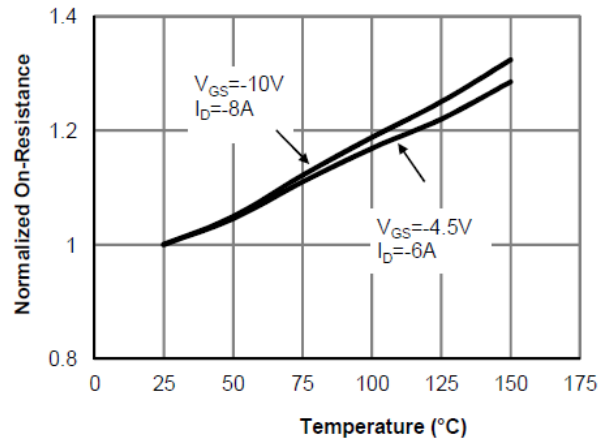


Figure 4: On-Resistance vs. Junction Temperature

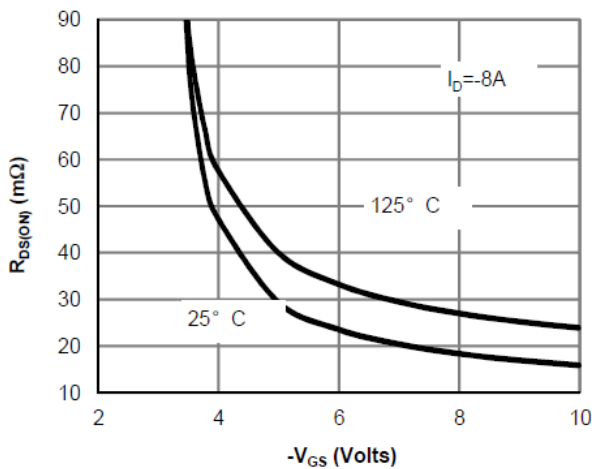


Figure 5: On-Resistance vs. Gate-Source Voltage

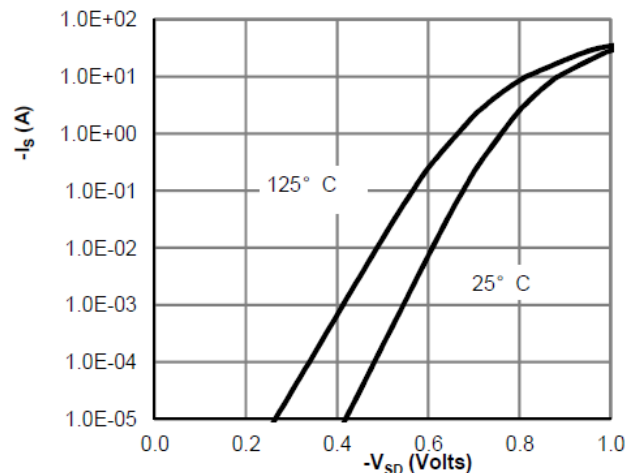
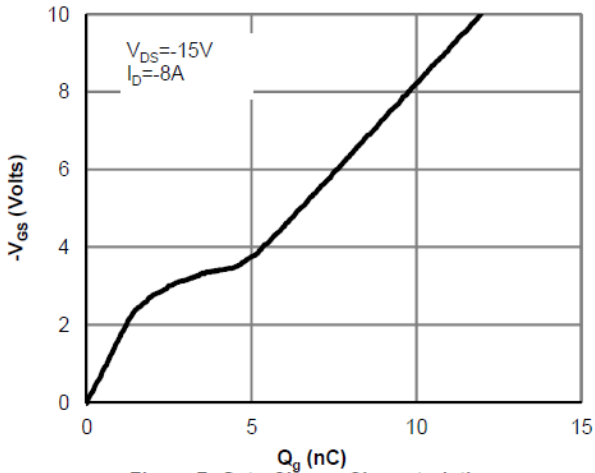
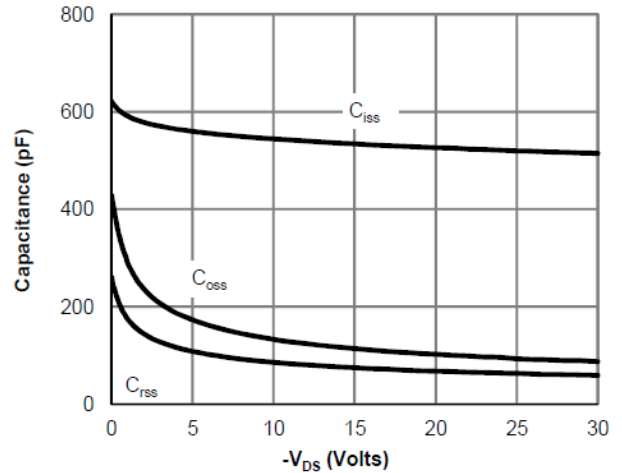
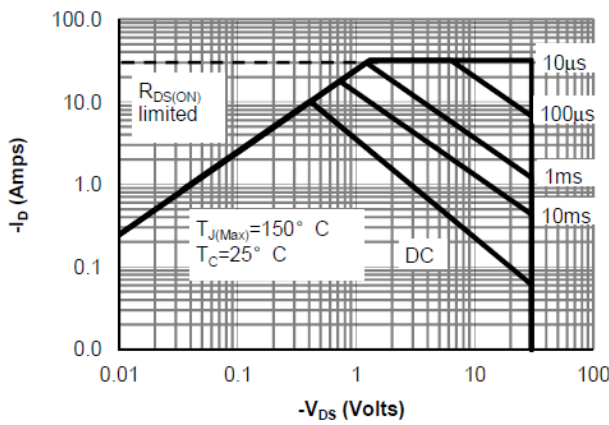
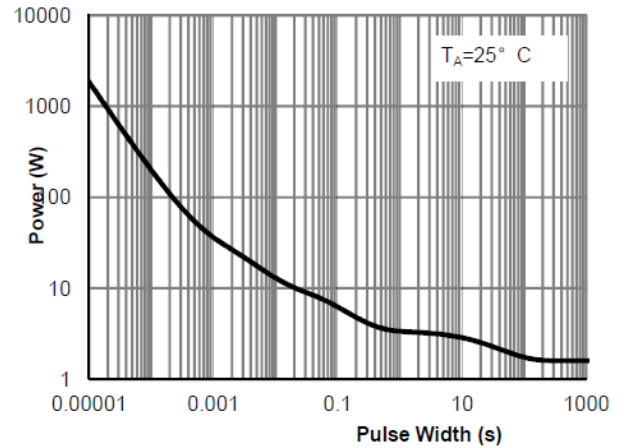
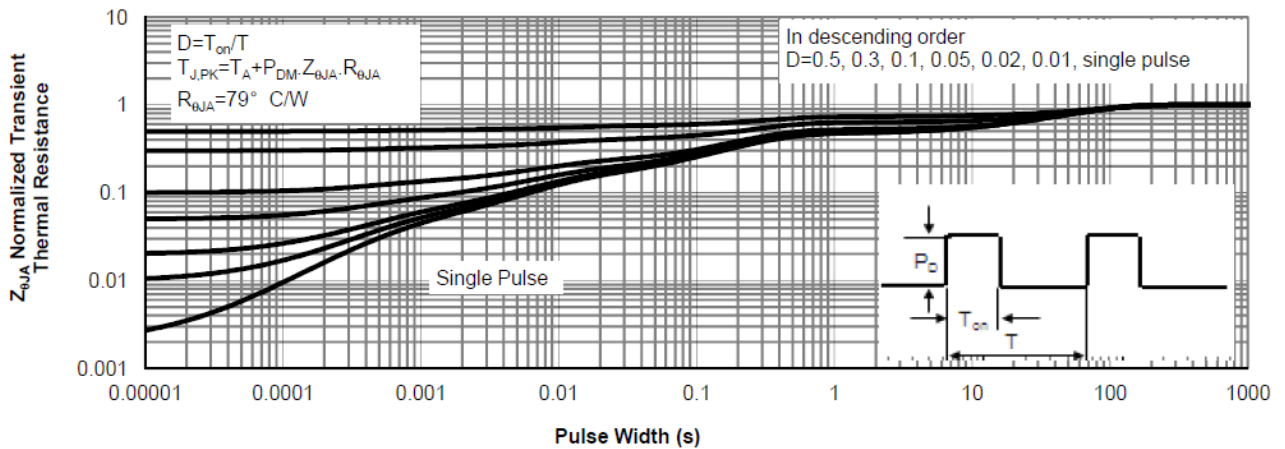


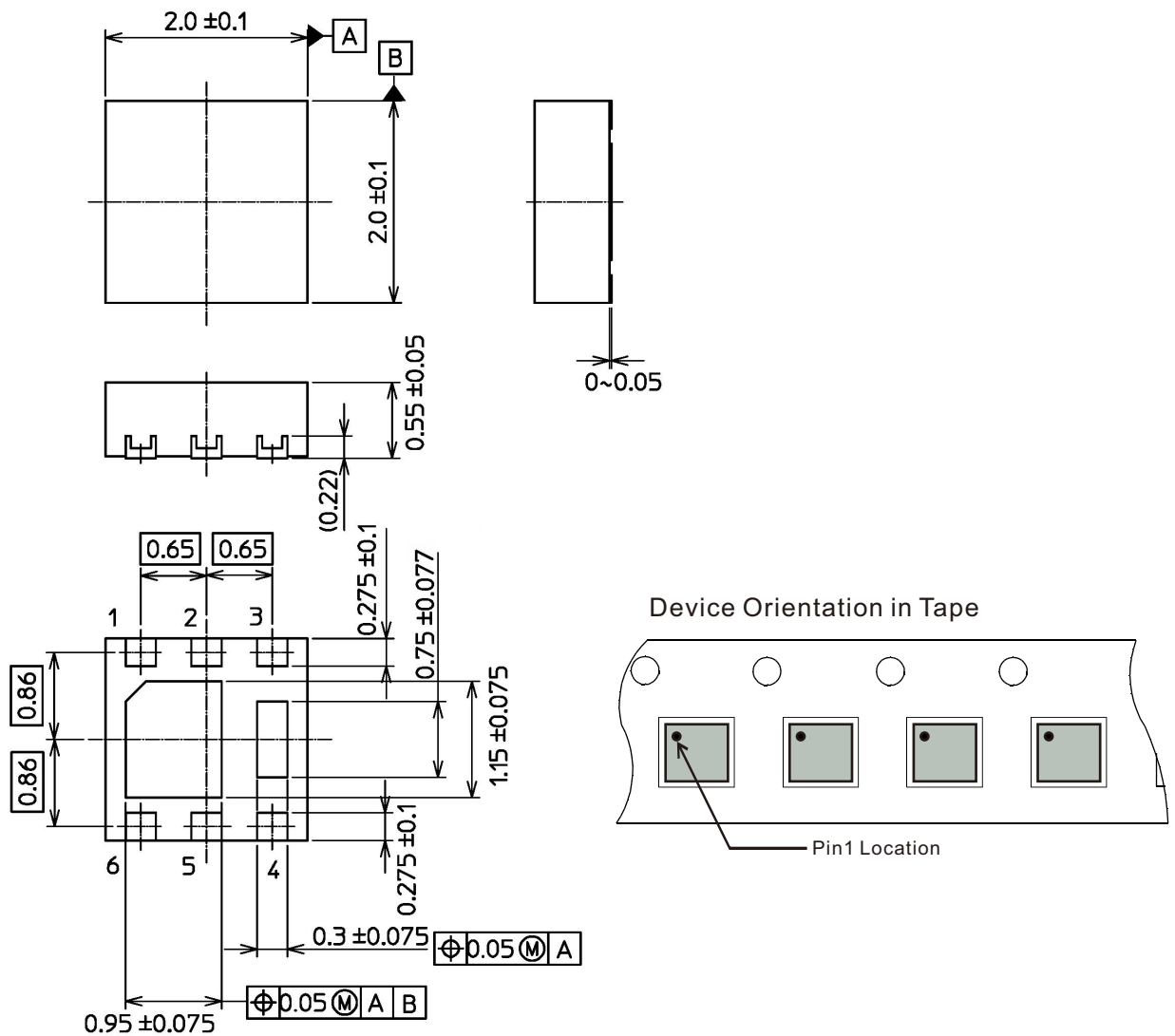
Figure 6: Body-Diode Characteristics

P-Channel Enhancement Mode Power MOSFET

Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

Figure 9: Maximum Forward Biased Safe Operating Area

Figure 10: Single Pulse Power Rating Junction-to-A

Figure 11: Normalized Maximum Transient Thermal Impedance

P-Channel Enhancement Mode Power MOSFET

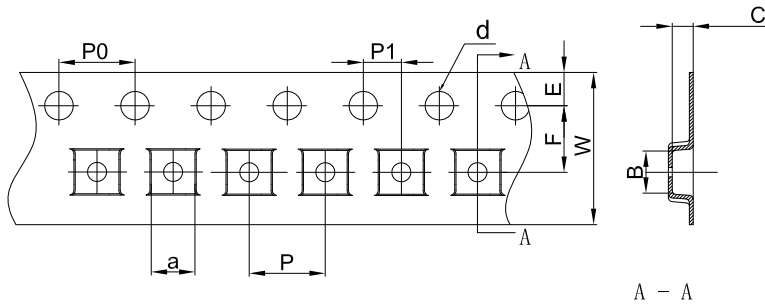
Package Information

DFN2X2-6L

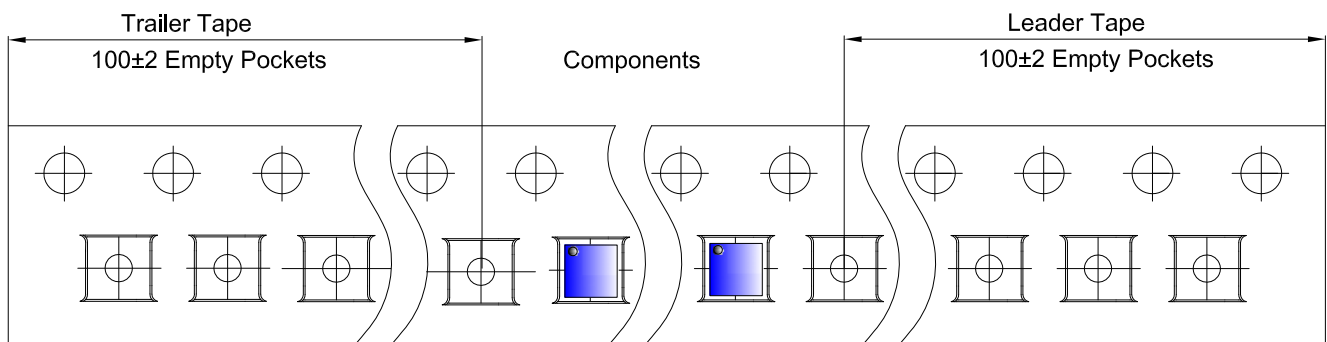
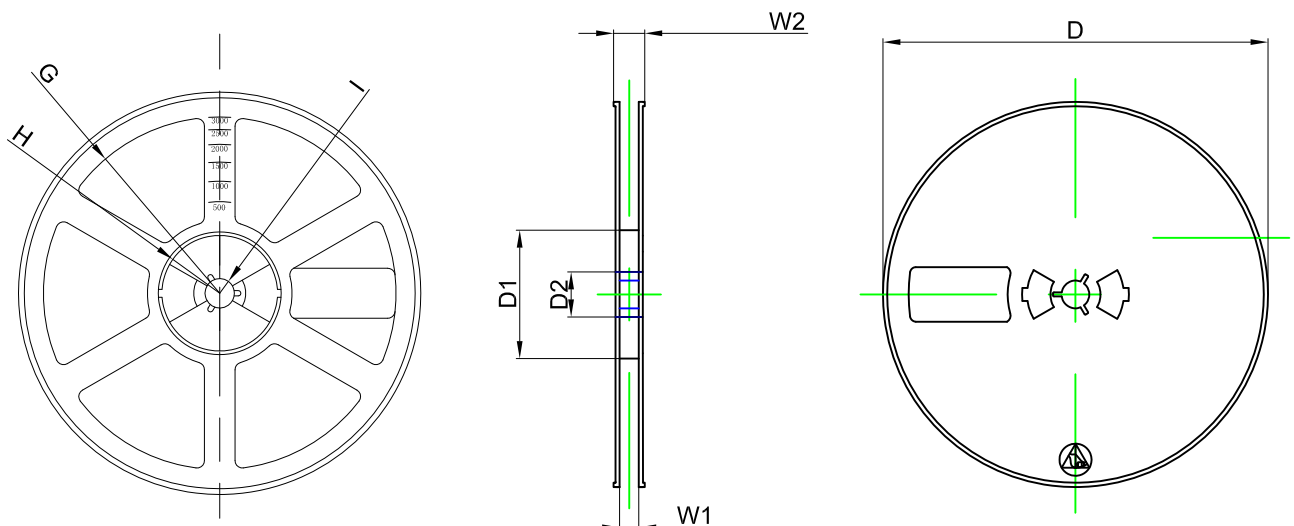


DFN2X2-6L Tape and Reel
P-Channel Enhancement Mode Power MOSFET

DFN2×2-6L Embossed Carrier Tape



Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
DFN2×2-6L	2.30	2.30	1.10	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

DFN2×2-6L Tape Leader and Trailer

DFN2×2-6L Reel


Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø180.00	60.00	13.00	R78.00	R25.60	R6.50	9.50	13.10

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	

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