



PJQ4530P-AU

30V N-Channel Enhancement Mode MOSFET

Voltage

30 V

Current

49 A

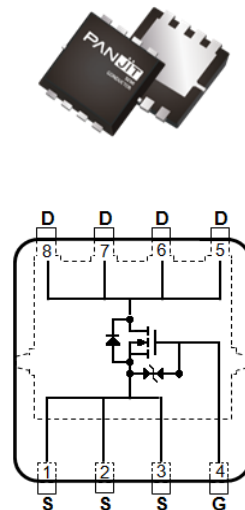
Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@10A < 7.8m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V$, $I_D@6A < 13m\Omega$
- Excellent FOM
- Logic Level Drive
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : DFN3333-8L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.03 grams

DFN3333-8L



Maximum Ratings and Thermal Characteristics ($T_A=25^\circ C$ unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ^(Note 3)	$T_C=25^\circ C$	I_D	49	A
	$T_C=100^\circ C$		35	
Pulsed Drain Current ^(Note 1)	$T_C=25^\circ C$	I_{DM}	196	
Power Dissipation	$T_C=25^\circ C$	P_D	30	W
	$T_C=100^\circ C$		15	
Continuous Drain Current ^(Note 4)	$T_A=25^\circ C$	I_D	14.2	A
	$T_A=70^\circ C$		11.8	
Power Dissipation	$T_A=25^\circ C$	P_D	2.5	W
	$T_A=70^\circ C$		1.8	
Single Pulse Avalanche Energy ^(Note 5)		E_{AS}	35	mJ
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~175	$^\circ C$
Thermal Resistance ^(Note 4)	Junction to Case	$R_{\theta JC}$	5	$^\circ C/W$
	Junction to Ambient	$R_{\theta JA}$	60	



PJQ4530P-AU

Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	30	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.2	1.7	2.5	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =10A	-	6.5	7.8	mΩ
		V _{GS} =4.5V, I _D =6A	-	10	13	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	-	-	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±10	uA
Dynamic ^(Note 6)						
Total Gate Charge	Q _g	V _{DS} =24V, I _D =10A, V _{GS} =10V ^(Note 2,3)	-	12.4	-	nC
Gate-Source Charge	Q _{gs}		-	2	-	
Gate-Drain Charge	Q _{gd}		-	3.4	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	600	-	pF
Output Capacitance	C _{oss}		-	254	-	
Reverse Transfer Capacitance	C _{rss}		-	71	-	
Gate resistance	R _g	f=1MHz	-	1.1	-	Ω
Turn-On Delay Time	t _{d(on)}	V _{DS} =24V, I _D =10A, V _{GS} =10V, R _G =3Ω ^(Note 2,3)	-	9	-	ns
Turn-On Rise Time	t _r		-	10	-	
Turn-Off Delay Time	t _{d(off)}		-	20	-	
Turn-Off Fall Time	t _f		-	16	-	
Drain-Source Diode						
Diode Forward Current	I _S	T _C =25°C	-	-	49	A
Pulsed Diode Forward Current	I _{SM}		-	-	196	
Diode Forward Voltage	V _{SD}	I _S =20A, V _{GS} =0V	-	0.8	1.1	V
Reverse Recovery Time	T _{rr}	V _{GS} =0V, I _S =20A	-	25	-	ns
Reverse Recovery Charge	Q _{rr}	dI _S /dt=100A/us ^(Note 2,3)	-	11	-	nC

NOTES :

1. Pulse width≤100us, Duty cycle≤2%.
2. Essentially independent of operating temperature typical characteristics.
3. Chip capability with an R_{θJC}=5°C/W.
4. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 inch² with 2oz.square pad of copper.
5. The test condition is L=0.5mH, I_{AS}=12A, V_{DD}=30V, V_{GS}=10V, Starting T_J=25°C.
6. Guaranteed by design, not subject to production testing.



PJQ4530P-AU

TYPICAL CHARACTERISTIC CURVES

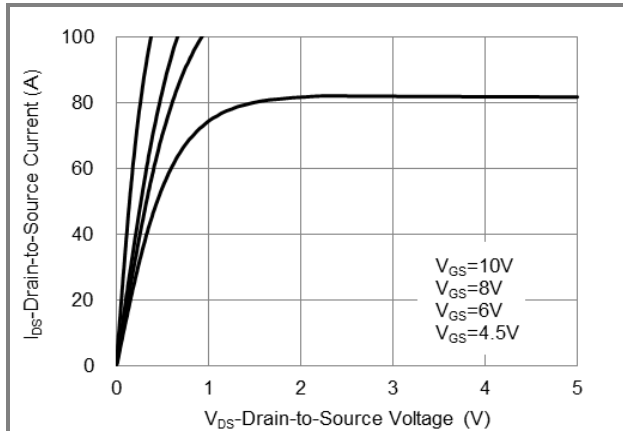


Fig.1 On-Region Characteristics

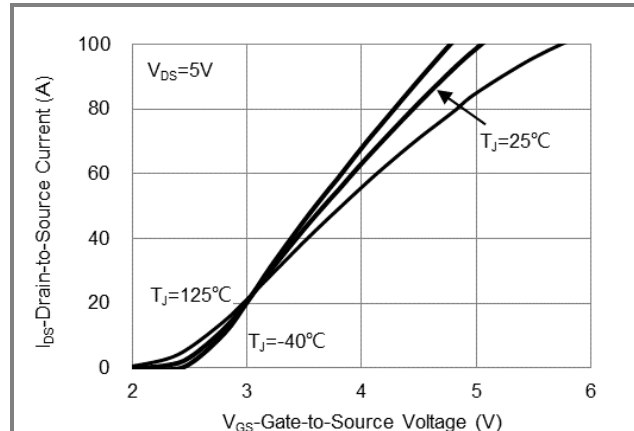


Fig.2 Transfer Characteristics

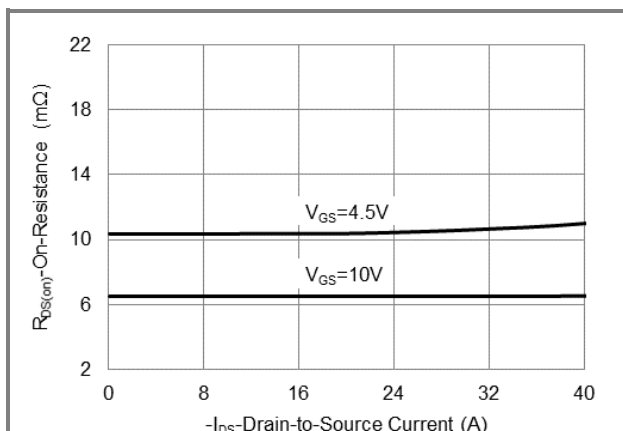


Fig.3 On-Resistance vs. Drain Current

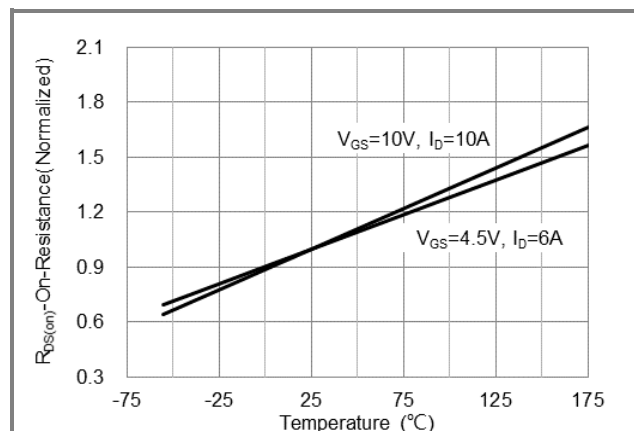


Fig.4 On-Resistance vs. Junction temperature

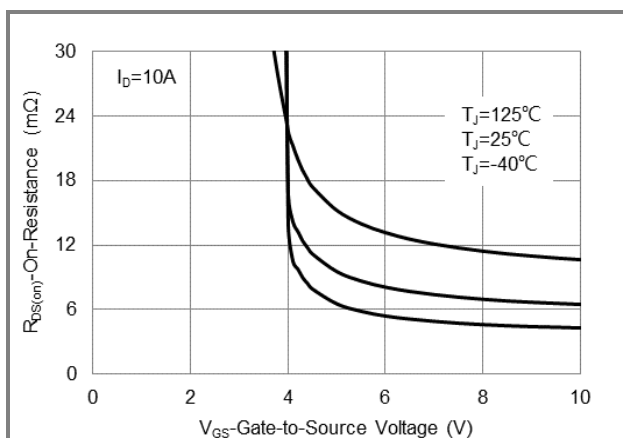


Fig.5 On-Resistance Variation with V_{GS}

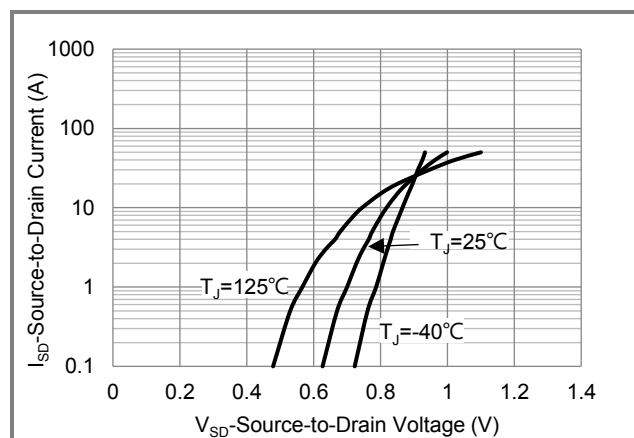


Fig.6 Source-Drain Diode Forward Voltage



PJQ4530P-AU

TYPICAL CHARACTERISTIC CURVES

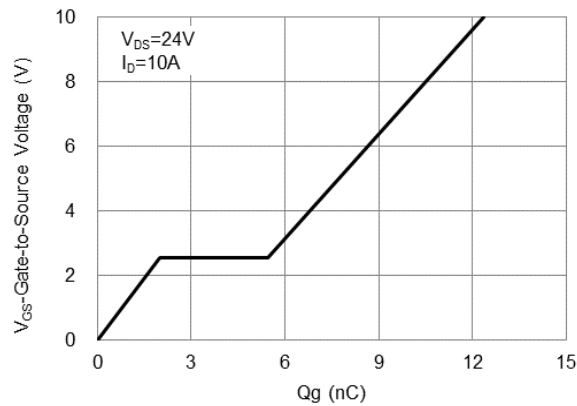


Fig.7 Gate-Charge Characteristics

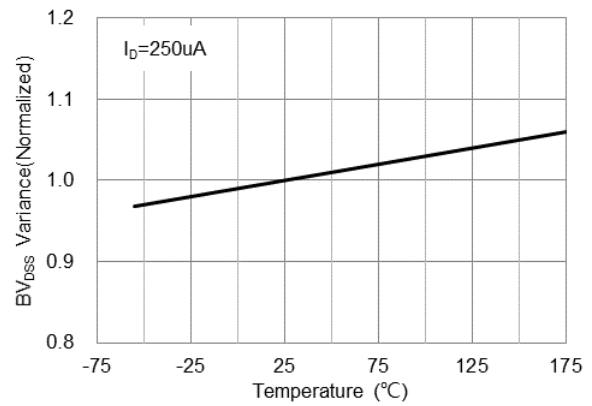


Fig.8 Breakdown Voltage Variation vs. Temperature

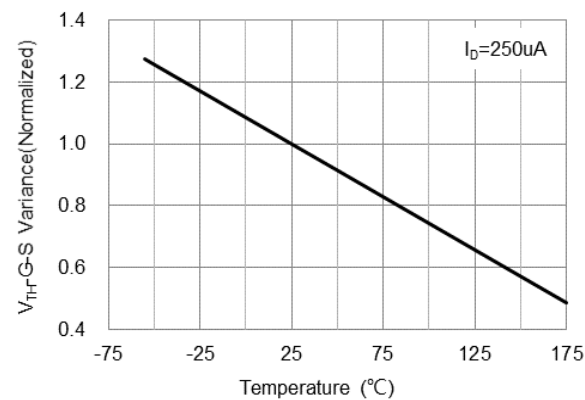


Fig.9 Threshold Voltage Variation with Temperature

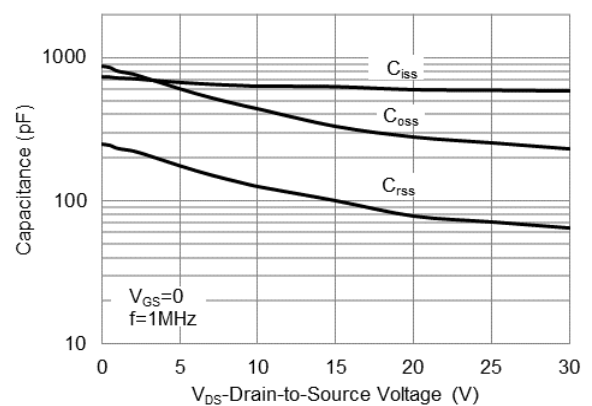


Fig.10 Capacitance vs. Drain-Source Voltage

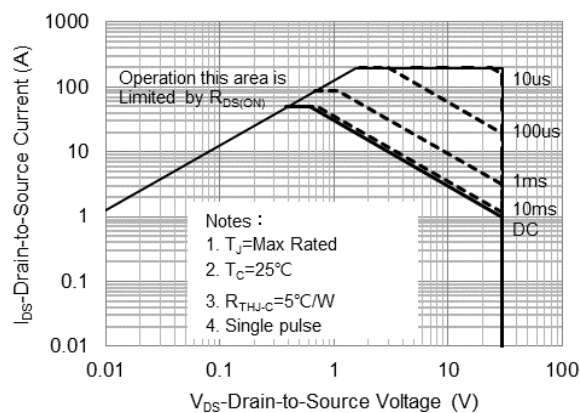


Fig.11 Maximum Safe Operating Area

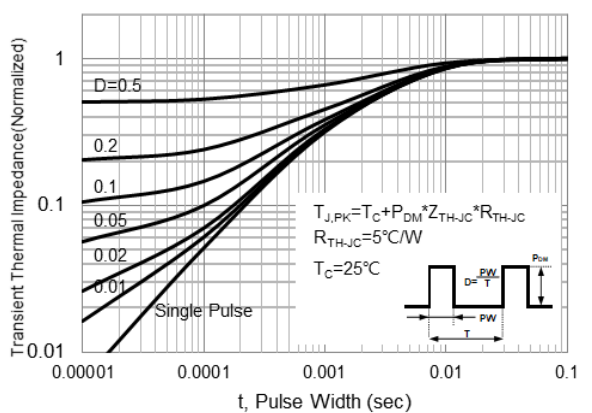


Fig.12 Normalized Transient Thermal Impedance



PJQ4530P-AU

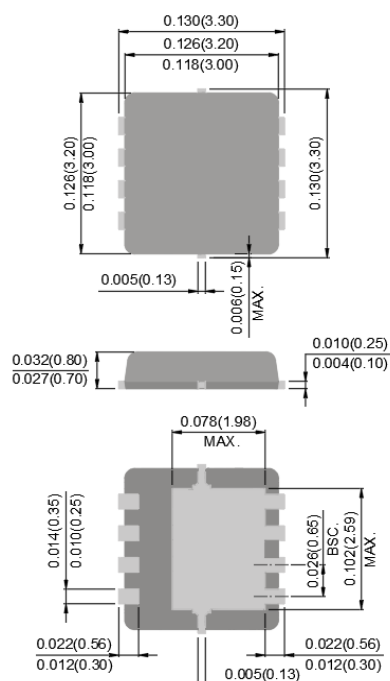
Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PJQ4530P-AU	DFN3333-8L	5K pcs / 13" reel	4530

Packaging Information & Mounting Pad Layout

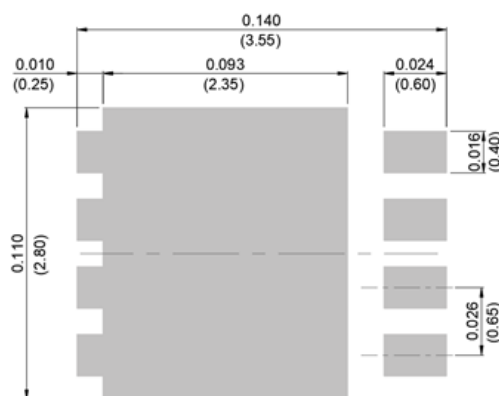
DFN3333-8L Dimension

Unit: inch(mm)



DFN3333-8L Pad Layout

Unit: inch(mm)





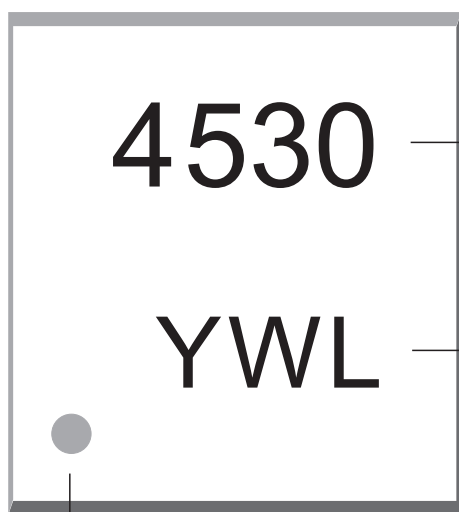
PJQ4530P-AU

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.



2.MARKING



1st Line : Marking code

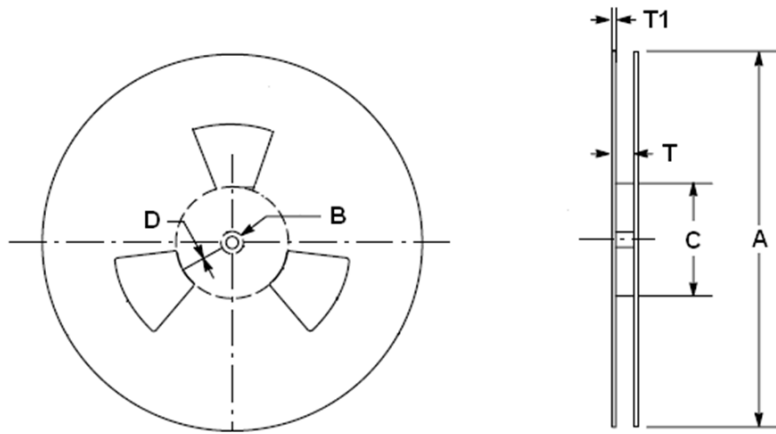
2nd line:

Y - Last digit of calendar year
W - Weekly
L - Lot

Pin 1



3. TAPING

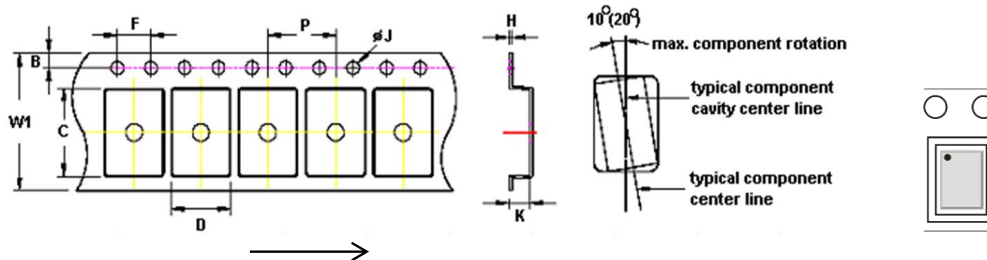


Notes :

1. Material : High Impact PS
2. Measured at Hub

A	B	C	D	T	T1
330.0±1.0	20.0±0.5	178.0±1.0	2.0±0.5	13.6±1.0	3.0±0.5

Units : mm



B	C	D	F	H	J	K	P	W1
1.75±0.1	3.55±0.1	3.55±0.1	4±0.1	0.3±0.05	1.55±0.05	1.1±0.1	8±0.1	12±0.3

Units : mm

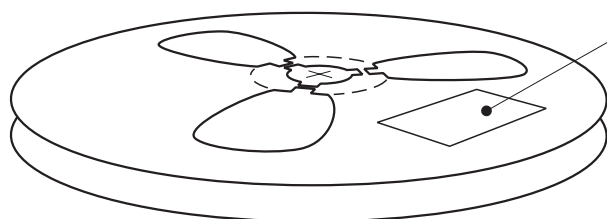
NOTE : All other requirements not specified herein shall be in accordance to EIA-481 standard under latest revision.

Package	Leader	Trailer
DFN3333-8L	>400mm (Included 100mm empty type with sealed)	>160mm



4. PACKING

REEL PACKING

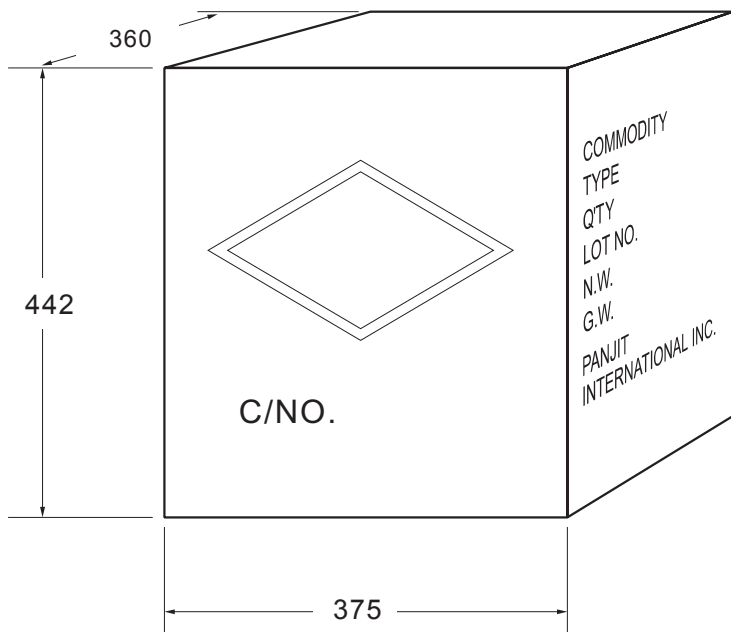


Quantity per Reel: 5,000 pcs

LABEL TYPE

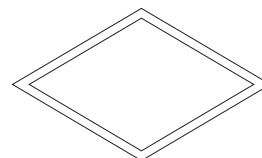
TYPE:				PANJIT	
MARKING:					
PART NO:					
LOT NO:					
QTY:		DC:			

CARTON



Box Dimensions : mm
Quantity per Box: 80,000 pcs

SHIPPING MARK



C/NO.
PRODUCT COUNTRY

SIDE MARK

COMMODITY:
TYPE:
Q'TY:
LOT NO.
N.W.
G.W.
PANJIT
INTERNATIONAL INC.



Packing Specifications

Package	Reel Size	Reel	Carton	Carton Size	Approx. Gross Weight
	(inch)	(pcs)	(EA)	(mm)	(kg)
Reel Packing					
DFN0603	7	10,000	800,000	390 x 270 x 400	9.0
DFN0603-2L	7	10,000	800,000	390 x 270 x 400	9.0
DFN 2L	7	8,000	640,000	390 x 270 x 400	8.6
DFN 3L	7	8,000	640,000	390 x 270 x 400	8.6
DFN1006-2L	7	10,000	800,000	390 x 270 x 400	5.0
DFN1006-3L	7	10,000	800,000	390 x 270 x 400	5.0
DFN1010-6L(ESD)	7	5,000	400,000	455 x 270 x 440	8.84
DFN1010B-6L(ESD)	7	5,000	400,000	455 x 270 x 440	8.84
DFN1608-2L	7	3,000	240,000	390 x 270 x 400	9.7
DFN1610-2L	7	3,000	240,000	390 x 270 x 400	9.7
DFN2020-6L(ESD)	7	3,000	240,000	455 x 270 x 440	12.3
DFN2020B-6L(ESD)	7	3,000	240,000	455 x 270 x 440	12.3
DFN2020-8L(ESD)	7	3,000	240,000	455 x 270 x 440	11.2
DFN2510-10L	7	5,000	400,000	390 x 270 x 400	10.5
	13	12,000	144,000	375 x 360 x 213	6.4
DFN2510A-10L(ESD)	7	3,000	240,000	455 x 270 x 440	10.95
DFN3030B-8L(ESD)	7	3,000	240,000	455 x 270 x 440	10.5
DFN3333-8L	13	5,000	80,000	375 x 360 x 422	10.5
DFN3333B-8L	13	5,000	80,000	375 x 360 x 422	10.5
DFN3810-9L(ESD)	7	3,000	120,000	390 x 240 x 420	4.4
DFN5060-8L(ESD)	13	3,000	48,000	375 x 360 x 422	14.19
DFN5060B-8L(ESD)	13	3,000	48,000	375 x 360 x 422	14.19
DFN5060X-8L(ESD)	13	3,000	48,000	375 x 360 x 422	14.19
DFN5515-14L	7	3,000	240,000	390 x 270 x 400	12.9
SOP-8	13	2,500	40,000	375 x 360 x 422	7.4
SOD-923	7	8,000	640,000	390 x 270 x 400	7.7
SOD-523	7	5,000	400,000	390 x 270 x 400	9.1
	13	12,000	144,000	375 x 360 x 230	5.4
SOD-323HE	7	5,000	400,000	390 x 270 x 400	11.9
	13	12,000	144,000	375 x 360 x 230	8.3
SOD-323	7	5,000	400,000	390 x 270 x 400	9.4
	13	12,000	144,000	375 x 360 x 230	5.9
SOD-323S	7	3,000	240,000	410 x 290 x 410	
SOD-123HE	7	3,000	240,000	390 x 270 x 400	12.4
	13	10,000	120,000	375 x 360 x 230	8.1
SOD-123FL	7	3,000	240,000	390 x 270 x 400	10.6
	13	10,000	120,000	375 x 360 x 230	7.2
SOD-123	7	3,000	240,000	390 x 270 x 400	9.9
	13	10,000	120,000	375 x 360 x 230	6.5
SOT-143	7	3,000	240,000	390 x 270 x 400	9.0
SOT-723(ESD)	7	8,000	640,000	455 x 270 x 440	10.5
SOT-563	7	4,000	320,000	390 x 270 x 400	10
	13	10,000	120,000	375 x 360 x 230	5.2
SOT-563(ESD)	7	4,000	320,000	455 x 270 x 440	10.8
SOT-553	7	4,000	320,000	390 x 270 x 400	9.4
	13	10,000	120,000	375 x 360 x 230	5.2



Packing Specifications

Package	Reel Size	Reel	Carton	Carton Size	Approx. Gross Weight
	(inch)	(pcs)	(EA)	(mm)	(kg)
Reel Packing					
SOT-523	7	4,000	320,000	390 x 270 x 400	10
SOT-523(ESD)	7	4,000	320,000	455 x 270 x 440	10.8
SOT-363	7	3,000	240,000	390 x 270 x 400	9.3
	13	10,000	120,000	375 x 360 x 230	7.1
SOT-363(ESD)	7	3,000	240,000	455 x 270 x 440	10.1
SOT-353	7	3,000	240,000	390 x 270 x 400	10
	13	10,000	120,000	375 x 360 x 230	7.2
SOT-323	7	3,000	240,000	390 x 270 x 400	7.9
	13	12,000	144,000	375 x 360 x 230	6.1
SOT-323(ESD)	7	3,000	240,000	455 x 270 x 440	8.7
SOT-23 6L	7	3,000	240,000	390 x 270 x 400	14.5
	13	10,000	120,000	375 x 360 x 230	7.9
SOT-23 6L(ESD)	7	3,000	240,000	455 x 270 x 440	15.3
SOT-23 6L-1	7	3,000	240,000	390 x 270 x 400	14.9
	13	10,000	120,000	375 x 360 x 230	8.1
SOT-23 6L-1(ESD)	7	3,000	240,000	455 x 270 x 440	15.7
SOT-23 5L	7	3,000	240,000	390 x 270 x 400	14.5
	13	10,000	120,000	375 x 360 x 230	7.9
SOT-23	7	3,000	240,000	390 x 270 x 400	9.8
	13	12,000	144,000	375 x 360 x 230	7
SOT-23(ESD)	7	3,000	240,000	455 x 270 x 440	10.6
SOT-223	13	2,500	40,000	375 x 360 x 422	14.96
SOT-89(ESD)	7	1,000	80,000	455 x 270 x 440	15.64
SMAF	7	3,000	120,000	390 x 240 x 420	10.9
	13	10,000	160,000	375 x 360 x 422	14.1
SMAF-C	7	3,000	120,000	390 x 240 x 420	10.9
	13	10,000	160,000	375 x 360 x 422	14.1
SMBF	7	1,500	60,000	390 x 240 x 420	9.6
	13	5,000	80,000	375 x 360 x 422	15.6
SMA(W)	7	1,800	100,800	390 x 240 x 420	13
	13	7,500	150,000	355 x 355 x 400	20.45
SMAS	7	2,300	128,800	390x 240x 420	11.5
	13	9,500	190,000	355x 355 x 400	16.1
SMA/DO-214AC	7	1,800	72,000	390 x 220 x 370	9.98
	13	7,500	120,000	375 x 360 x 390	17.35
SMB/DO-214AA	7	800	32,000	390 x 220 x 370	7.69
	13	3,000	48,000	375 x 360 x 390	13.23
SMC/DO-214AB	7	800	24,000	390 x 220 x 370	10.79
	13	3,000	42,000	375 x 360 x 390	17.98
SC-59 (ESD)	7	3,000	240,000	455 x 270 x 440	9.9
DO-41	13	5,000	25,000	340 x 340 x 410	11.04
DO-15	13	4,000	20,000	340 x 340 x 410	11.39
DO-201AD / DO-201AE	13	1,250	6,250	340 x 340 x 410	9.2
DO-218AC / DO-218AB	13	600	24,000	375 x 360 x 230	10.25
P-600	13	800	4,000	340 x 340 x 410	9.85



Packing Specifications

Package	Reel Size	Reel	Carton	Carton Size	Approx. Gross Weight
	(inch)	(pcs)	(EA)	(mm)	(kg)
Reel Packing					
DO-34	15	10,000	50,000	365 x 370 x 410	10.1
DO-35	15	10,000	50,000	365 x 370 x 410	11.2
DO-41G	15	5,000	25,000	365 x 370 x 410	10.9
MICRO-MELF	7	3,000	240,000	390 x 270 x 400	8.8
	13	10,000	200,000	355 x 355 x 400	11.5
QUADRO-MELF	7	2,500	200,000	390 x 270 x 400	13.3
	13	10,000	200,000	355 x 355 x 400	14.9
MINI-MELF/LL-34	7	2,500	200,000	390 x 270 x 400	12.7
	13	10,000	200,000	355 x 355 x 400	14.6
MELF/DL-41	7	1,500	84,000	390 x 270 x 400	18.3
	13	5,000	100,000	355 x 355 x 400	23.5
MDI	13	3,000	48,000	375 x 360 x 390	14.71
MICRO DIP/TDI	7	1,000	40,000	390 x 240 x 420	9.5
	13	4,000	64,000	375 x 360 x 422	17
MBF	13	5,000	80,000	375 x 360 x 390	15.9
SDIP	13	1,500	21,000	375 x 360 x 390	14.31
TO-277	7	1,500	60,000	390 x 240 x 420	12.2
	13	5,000	80,000	375 x 360 x 422	19.1
TO-277A	13	5,000	80,000	375 x 360 x 422	18.52
TO-277B	13	5,000	80,000	375 x 360 x 422	20.6
TO-252	13	3,000	42,000	375 x 360 x 390	18.8
TO-252AA	13	3,000	48,000	375 x 360 x 422	24.16
TO-252AA	13	3,000	42,000	375 x 360 x 390	20.78
TO-263/D ² PAK	13	800	6,400	375 x 360 x 390	14.45
ABS	13	4,000	6,400	375 x 360 x 422	17.8
M4	13	3,000	42,000	375 x 360 x 390	14
M8	13	2,000	16,000	375 x 360 x 390	16.86



Packing Specifications

Package	Box	Inner Box Size	Carton	Carton Size	Approx. Gross Weight
	(EA)	(mm)	(EA)	(mm)	(kg)
Bulk Packing					
DO-41	1,000	198 x 84 x 20	50,000	459 x 214 x 256	19.3
DO-15	1,000	200 x 85 x 25	40,000	459 x 214 x 256	20.7
DO-201AD / DO-201AE	500	200 x 85 x 40	12,500	459 x 214 x 256	15.95
P-600	100	208 x 82 x 40	2,500	459 x 214 x 256	6.83
DO-34	2,000	240 x 90 x 100	120,000	410 x 268 x 345	14.5
DO-35	2,000	240 x 90 x 100	120,000	410 x 268 x 345	17.1
DO-41G	1,000	240 x 90 x 100	60,000	410 x 268 x 345	18.5
TO-220AC	2,000	540 x 145 x 85	8,000	555 x 306 x 200	21.76
ITO-220AC	2,000	540 x 145 x 85	8,000	555 x 306 x 200	19.34
TO-220AB	2,000	540 x 145 x 85	8,000	555 x 306 x 200	22
TO-220AB-L	2,000	540 x 145 x 85	8,000	555 x 306 x 200	24.63
ITO-220AB	2,000	540 x 145 x 85	8,000	555 x 306 x 200	19.58
ITO-220AB-F	2,000	540 x 145 x 85	8,000	555 x 306 x 188	25.5
TO-251AA	8,000	555 x 145 x 87	32,000	570 x 306 x 203	23.87
TO-251AB	8,000	555 x 145 x 95	32,000	572 x 306 x 218	18.64
TO-263/D ² PAK	2,000	540 x 145 x 85	8,000	555 x 306 x 200	18.7
GBU	250	220 x 120 x 43	5,000	510 x 235 x 245	21.5
GBU-2	1,000	485 x 185 x 120	2,000	500 x 200 x 270	12.54
GBL	300	240 x 120 x 35	6,000	510 x 260 x 200	15
GBL-2	2,000	550 x 200 x 122	4,000	565 x 215 x 265	13.15
GBJ	200	200 x 145 x 42	3,000	455 x 220 x 240	14.5
GBJ-2	900	485 x 185 x 120	1,800	500 x 200 x 270	18.2
KBP	500	225 x 160 x 35	7,500	500 x 236 x 196	12.58
KBPF	500	225 x 160 x 35	7,500	500 x 250 x 195	13.3
KBL	200	257 x 125 x 50	3,000	415 x 275 x 300	17.5
KBU	200	274 x 150 x 60	3,000	470 x 290 x 330	23.7
KBJ	200	306 x 108 x 42	2,000	322 x 246 x 252	15
KBJ-2	1,000	550 x 200 x 122	2,000	565 x 215 x 265	13.13
KBJ-P	250	305 x 130 x 45	2,000	327 x 290 x 210	15.05
D3K	500	210 x 155 x 30	7,500	480 x 225 x 170	11.6
DXK	2,800	550 x 200 x 122	5,600	565 x 215 x 265	13.8
TO-3P/TO-247AD	-	-	1,500	530 x 243 x 100	13.9
TO-247AD 2L / TO-3PL	-	-	1,500	530 x 255 x 110	12.2
TO-247AD-2LD	-	-	1,500	530 x 243 x 100	14.35

Packing Specifications

Package	Box	Inner Box Size	Carton	Carton Size	Approx. Gross Weight
	(EA)	(mm)	(EA)	(mm)	(kg)
Tube Packing					
GBJ-1	750	490 x 201 x 104	1,500	505 x 225 x 235	16



Packing Specifications

Package	Tape Space	Ammo	Inner Box Size	Carton	Carton Size	Appox. Gross Weight
	(mm)	(pcs)	(mm)	(EA)	(mm)	(kg)
Ammunition Packing						
DO-41	52	5,000	255 x 75 x 150	40,000	339 x 276 x 330	15.9
	52	3,000	255 x 73 x 95	24,000	333 x 281 x 218	8.9
DO-15	52	3,000	255 x 75 x 150	24,000	339 x 276 x 330	13.25
	52	1,500	255 x 73 x 95	18,000	339 x 276 x 330	8.64
DO-201AD / DO-201AE	52	1,250	255 x 75 x 150	10,000	339 x 276 x 330	13.36
	52	750	255 x 75 x 95	9,000	339 x 276 x 330	11.62
P-600	52	400	255 x 75 x 150	3,200	339 x 276 x 330	8.1
DO-34	52	5,000	248 x 80 x 75	100,000	410 x 268 x 345	13.1
	26	5,000	248 x 80 x 48	150,000	410 x 268 x 345	15.3
DO-35	52	5,000	248 x 80 x 75	100,000	410 x 268 x 345	15.7
	26	5,000	248 x 80 x 48	150,000	410 x 268 x 345	17.5
DO-41G	52	2,500	248 x 80 x 75	50,000	410 x 268 x 345	16.4
	26	2,500	248 x 80 x 48	75,000	410 x 268 x 345	17.8