

1.DATA SHEET

DL4728A~DL4764A

SURFACE MOUNT ZENER DIODES

VOLTAGE 3.3 to 100 Volts **POWER** 1.0 Watts

MELF/DL-41 Unit : inch (mm)

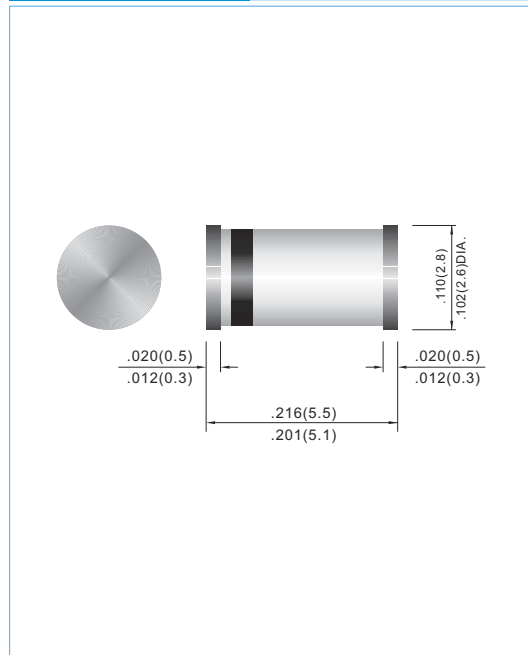
FEATURES

- Low profile package
- Built-in strain relief
- Low inductance
- In compliance with EU RoHS 2002/95/EC directives

MECHANICAL DATA

- Case: Molded Glass MELF / DL-41
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: See Diagram Below
- Approx. Weight: 0.16 grams
- Mounting Position: Any
- Packing information

T/R - 5K per 13" paper Reel



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Units
Power Dissipation at $T_{amb} = 25^\circ\text{C}$	P_{TOT}	1*	W
Junction Temperature	T_J	200	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to + 200	$^\circ\text{C}$

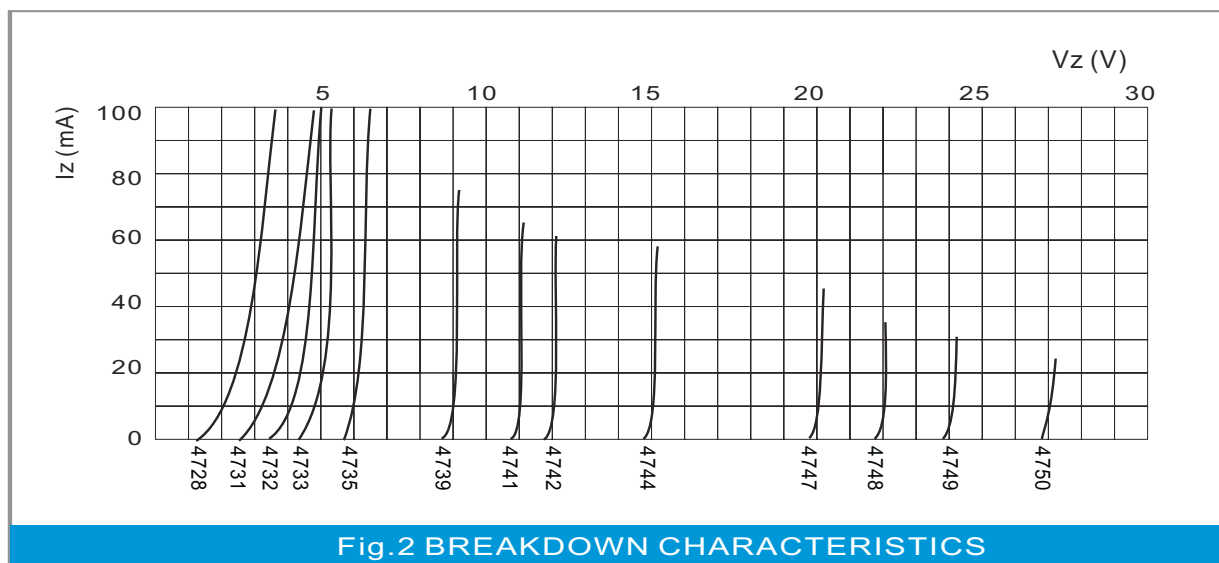
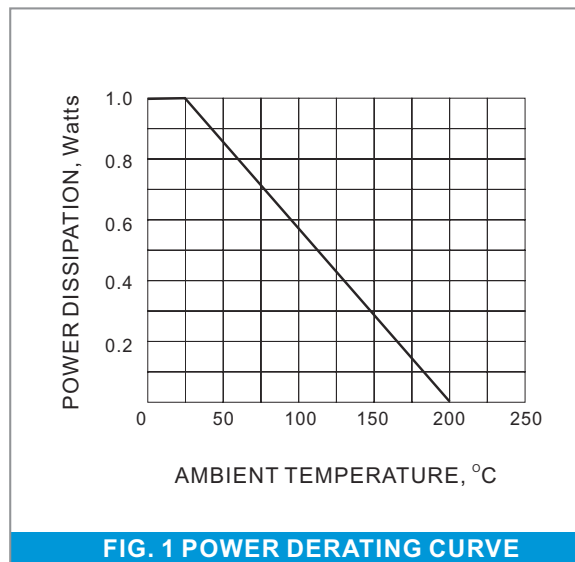
*Valid provided that leads at a distance of 10mm from case are kept at ambient temperature.

Parameter	Symbol	Min.	Typ.	Max.	Units
Thermal Resistance Junction to Ambient Air	R_{thA}	—	—	170*	K/W
Forward Voltage at $I_F = 200\text{mA}$	V_F	—	—	1.2	V

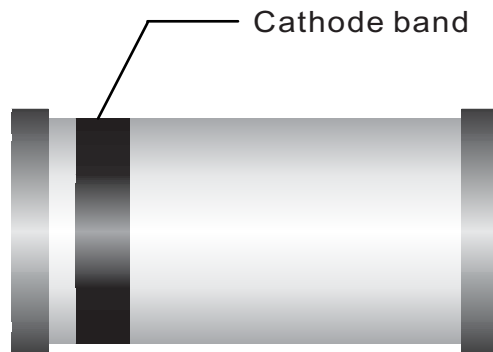
*Valid provided that leads at a distance of 10mm from case are kept at ambient temperature.

Part Number	Maximum Zener Voltage			Maximum Zener Impedance				Maximum Leakage Current	
	Vz @ IzT			ZzT @ IzT		ZzK @ IzK		IR @ VR	
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	uA	V
1.0 watt Zener Diodes (Glass Sealed Envelope)									
DL4728A	3.3	3.1	3.5	10.0	76.0	400	1.00	100	1.0
DL4729A	3.6	3.4	3.8	10.0	69.0	400	1.00	100	1.0
DL4730A	3.9	3.7	4.1	9.0	64.0	400	1.00	50	1.0
DL4731A	4.3	4.1	4.5	9.0	58.0	400	1.00	10	1.0
DL4732A	4.7	4.5	4.9	8.0	53.0	500	1.00	10	1.0
DL4733A	5.1	4.8	5.4	7.0	49.0	550	1.00	10	1.0
DL4734A	5.6	5.3	5.9	5.0	45.0	600	1.00	10	2.0
DL4735A	6.2	5.9	6.5	2.0	41.0	700	1.00	10	3.0
DL4736A	6.8	6.5	7.1	3.5	37.0	700	1.00	10	4.0
DL4737A	7.5	7.1	7.9	4.0	34.0	700	0.50	10	5.0
DL4738A	8.2	7.8	8.6	4.5	31.0	700	0.50	10	6.0
DL4739A	9.1	8.6	9.6	5.0	28.0	700	0.50	10	7.0
DL4740A	10.0	9.5	10.5	7.0	25.0	700	0.25	10	7.6
DL4741A	11.0	10.5	11.6	8.0	23.0	700	0.25	5	8.4
DL4742A	12.0	11.4	12.6	9.0	21.0	700	0.25	5	9.1
DL4743A	13.0	12.4	13.7	10.0	19.0	700	0.25	5	9.9
DL4744A	15.0	14.3	15.8	14.0	17.0	700	0.25	5	11.4
DL4745A	16.0	15.2	16.8	16.0	15.5	700	0.25	5	12.2
DL4746A	18.0	17.1	18.9	20.0	14.0	750	0.25	5	13.7
DL4747A	20.0	19.0	21.0	22.0	12.5	750	0.25	5	15.2
DL4748A	22.0	20.9	23.1	23.0	11.5	750	0.25	5	16.7
DL4749A	24.0	22.8	25.2	25.0	10.5	750	0.25	5	18.2
DL4750A	27.0	25.7	28.4	35.0	9.5	750	0.25	5	20.6
DL4751A	30.0	28.5	31.5	40.0	8.5	1000	0.25	5	22.8
DL4752A	33.0	31.4	34.7	45.0	7.5	1000	0.25	5	25.1
DL4753A	36.0	34.2	37.8	50.0	7.0	1000	0.25	5	27.4
DL4754A	39.0	37.1	41.0	60.0	6.5	1000	0.25	5	29.7
DL4755A	43.0	40.9	45.2	70.0	6.0	1500	0.25	5	32.7
DL4756A	47.0	44.7	49.4	80.0	5.5	1500	0.25	5	35.8
DL4757A	51.0	48.5	53.6	95.0	5.0	1500	0.25	5	38.8
DL4758A	56.0	53.2	58.8	110.0	4.5	2000	0.25	5	42.6
DL4759A	62.0	58.9	65.1	125.0	4.0	2000	0.25	5	47.1
DL4760A	68.0	64.6	71.4	150.0	3.7	2000	0.25	5	51.7
DL4761A	75.0	71.3	78.8	175.0	3.3	2000	0.25	5	56.0
DL4762A	82.0	77.9	86.1	200.0	3.0	3000	0.25	5	62.2
DL4763A	91.0	86.5	95.6	250.0	2.8	3000	0.25	5	69.2
DL4764A	100.0	95.0	105.0	350.0	2.5	3000	0.25	5	76.0

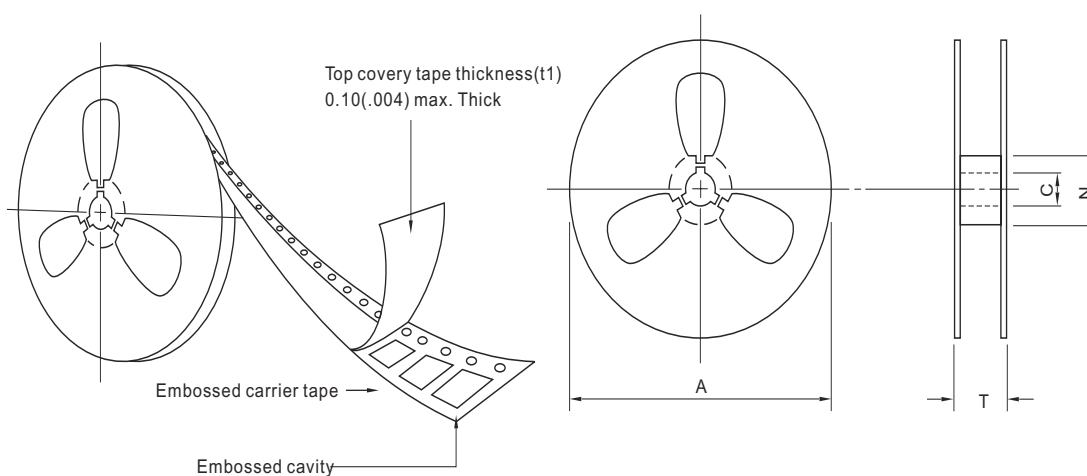
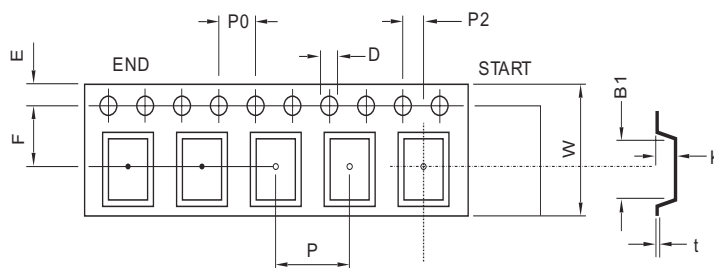
RATING AND CHARACTERISTIC CURVES



2. MARKING



3. TAPING



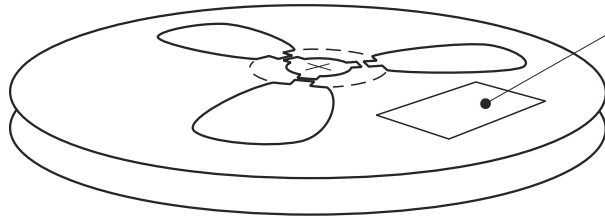
SYMBOL	mm(inch)
TYPE SIZE	12.00 (0.472)
B1	8.20 (0.323)max.
D	1.55 ± 0.05 (0.061 ± 0.002)
A	330.0 (13.0)max.
N	75.0 (2.952)min.
C	13.0 ± 0.5 (0.51 ± 0.02)
E	1.75 ± 0.10 (0.068 ± 0.003)
F	5.50 ± 0.05 (0.217 ± 0.001)
K	3.00 (0.118)max.
P	4.00 ± 0.10 (0.157 ± 0.003)
Po	4.00 ± 0.10 (0.157 ± 0.003)
P2	2.00 ± 0.10 (0.079 ± 0.003)
t	0.42 (0.017)max.
W	12.0 ± 3.0 (0.472 ± 0.118)
T	18.40 (0.724)max.

Note:

1. Ao,Bo,Ko are determined by component size. The clearance between the component and The component and the cavity must be with in 0.05mm (0.002")min. to 0.65mm (0.025") max. For 12mm tape, 0.05mm (0.002")min. To 0.90mm (0.035") max. For 16mm tape.
2. In addition, the components cannot rotate more than 20° within the determined cavity, see sketch a below.

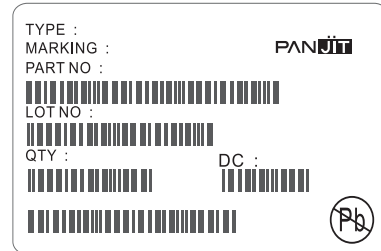
4. PACKING

REEL PACKING

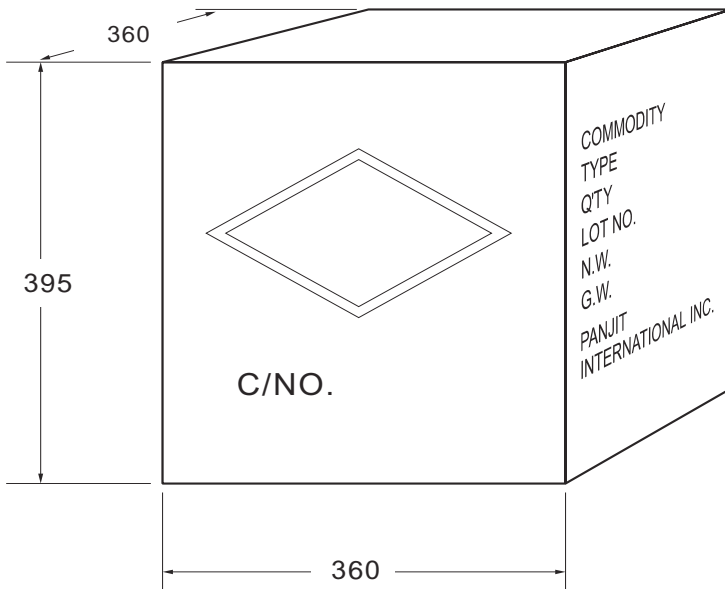


Quantity per Reel: 5,000 pcs

LABEL TYPE

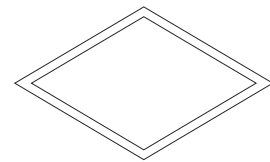


CARTON



Box Dimensions : mm
Quantity per Box: 200,000pcs

SHIPPING MARK



C/NO.
PRODUCT COUNTRY

SIDE MARK

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

Bulk Packing

PACKAGE	INNER BOX SIZE	BOX	CARTON SIZE	CARTON	APPROX. GROSS WEIGHT
	(m/m)	(EA)	(m/m)	(EA)	(Kg)
Bulk Packing					
A-405	198 x 84 x 20	1,000	459 x 214 x 256	50,000	18.2
AG / RB-20 / WOB	258 x 190 x 77	1,000	395 x 270 x 400	10,000	17
AM	258 x 190 x 77	1,000	395 x 270 x 400	10,000	15
CM / KBPC	193 x 193 x 46	50	405 x 210 x 265	500	17
CMW / KBPC-W	193 x 193 x 46	25	405 x 210 x 265	250	8.5
KBPC-P /CP-15 / 25 / 35 / 50	193 x 193 x 46	50	405 x 210 x 265	500	12
KBPC-PW /CPW-15 / 25 / 35 / 50	193 x 193 x 46	25	405 x 210 x 265	250	6
CP-3 / 6	219 x 115 x 90	200	600 x 235 x 198	2,000	7.3/8.8
CP-8 / 10	219 x 115 x 90	200	600 x 235 x 198	2,000	13.8
DIP	-	-	495 x 214 x 256	12,000	9
DO-15	200 x 85 x 25	1,000	459 x 214 x 256	40,000	20.2
DO-201AD	200 x 85 x 40	500	495 x 214 x 256	12,500	15.8
DO-201AE	200 x 85 x 40	500	495 x 214 x 256	12,500	15.9
DO-34	96 x 80 x 42	2,000	410 x 335 x 265	120,000	14.4
DO-35	96 x 80 x 42	2,000	410 x 335 x 265	120,000	17.4
DO-41	198 x 84 x 20	1,000	459 x 214 x 265	50,000	19.4
DO-41G	96 x 80 x 42	1,000	410 x 335 x 265	60,000	18
FL	230 x 230 x 50	500	495 x 245 x 180	3,000	18.4
FI	488 x 150 x 100	1,200	510 x 340 x 235	24,000	18
GBJ (TUBE)	556 x 150 x 100	800	578 x 340 x 235	3,200	25.4
GBJ (BOX)	350 x 337 x 44	600	375 x 360 x 213	2,400	14.4
GBL	350 x 337 x 44	960	375 x 360 x 213	3,840	13.1
GBP	350 x 337 x 44	1,120	375 x 360 x 213	4,480	10.9
GBPC	193 x 193 x 46	50	405 x 210 x 265	500	17
GBPCW	193 x 193 x 46	25	405 x 210 x 265	250	8.5
GBU (TUBE)	488 x 150 x 100	800	510 x 310 x 235	3,200	23.2
GBU (BOX)	350 x 337 x 44	800	375 x 360 x 213	3,200	16.9
GL	195 x 195 x 40	80	460 x 215 x 260	800	11
GPJ	500 x 150 x 145	750	572 x 306 x 218	1,500	17
KBJ	221 x 176 x 45	200	376 x 263 x 241	2,000	15
KBPF	207 x 240 x 25	500	425 x 250 x 385	150,000	19.2
KBU	276 x 158 x 59	200	493 x 287 x 320	3,000	24
MDI	350 x 337 x 44	6,000	375 x 360 x 390	48,000	14.4
P-600	208 x 90 x 83	500	459 x 214 x 256	5,000	12.1
R-1	198 x 84 x 20	1,000	459 x 214 x 256	50,000	11.8
SDIP	-	-	495 x 214 x 256	24,000	12.4
TO-220	540 x 145 x 82	2,000	555 x 306 x 188	8,000	22
ITO-220	540 x 145 x 82	2,000	555 x 306 x 188	8,000	19.6
TO-251AB	555 x 145 x 95	8,400	572 x 306 x 218	33,600	22
TO-3P / TO-247AD	-	-	536 x 243 x 100	1,500	13
KBL	230 x 147 x 50	200	460 x 245 x 275	3,000	17.25
K3 / K6	219 x 115 x 90	200	600 x 235 x 198	2,000	7.3/8.8
K8	210 x 115 x 90	200	600 x 235 x 198	2,000	13.8

Reel Packing

PACKAGE	REEL SIZE (inch)	REEL (pcs)	COMPONENT SPACE (m/m)	TAPE SPACE (m/m)	REEL DIA (m/m)	CARTON SIZE (m/m)	CARTON (EA)	APPROX. GROSS WEIGHT (Kg)
Reel Packing								
R-1	-	5,000	5.0	52	330	340 x 340 x 410	25,000	7.9
A-405	-	5,000	5.0	52	330	340 x 340 x 410	25,000	11.3
DO-15	-	4,000	5.0	52	330	340 x 340 x 410	20,000	11
DO-201AD	-	1,250	10.0	52	330	340 x 340 x 410	6,250	9.6
DO-201AE	-	1,250	10.0	52	330	340 x 340 x 410	6,250	9.6
DO-34	15	10,000	5.0	52	360	360 x 360 x 395	50,000	9.5
DO-35	15	10,000	5.0	52	360	360 x 360 x 395	50,000	11.4
DO-41	-	5,000	5.0	52	330	340 x 340 x 410	25,000	11.8
DO-41G	15	5,000	5.0	52	360	360 x 360 x 395	25,000	11.3
P-600	-	800	10.0	52	330	340 x 340 x 410	4,000	10
DDPAK/TO-252	13	3,000	8.0	16	330	375 x 360 x 390	42,000	20.1
D2PAK/TO-263	13	800	16.0	24	330	375 x 360 x 390	6,400	14.7
MDI	13	3,000	8.0	12	330	375 x 360 x 390	48,000	14.6
SDIP	13	1,500	12.0	16	330	375 x 360 x 390	21,000	14.9
QUADRO-MELF	7	2,500	4.0	-	178	385 x 380 x 260	200,000	13.5
MELF/DL-41	13	5,000	4.0	-	330	360 x 360 x 395	200,000	23.4
MICRO-MELF	7	2,500	4.0	-	178	385 x 380 x 260	200,000	9.1
MINI-MELF	13	10,000	4.0	-	330	360 x 360 x 395	200,000	14.8
MINI-MELF	7	2500	4.0	-	178	385 x 380 x 260	120,000	13
SMA	13	7,500	4.0	12	330	375 x 360 x 390	120,000	17.5
SMA	7	1,800	4.0	12	178	390 x 240 x 420	72,000	10
SMB	13	3,000	8.0	12	330	375 x 360 x 390	48,000	13.6
SMB	7	500	8.0	12	178	390 x 240 x 420	20,000	6.5
SMC	13	3,000	8.0	16	330	375 x 360 x 390	42,000	18.4
SMC	7	500	8.0	16	178	390 x 240 x 420	15,000	8.5
SOD-123	13	10,000	4.0	8	330	375 x 360 x 213	120,000	6.4
SOD-123	7	3,000	4.0	8	178	390 x 270 x 400	240,000	9.4
SOD-123FL	13	10,000	4.0	8	330	375 x 360 x 213	120,000	6.4
SOD-123FL	7	3,000	4.0	8	178	390 x 270 x 400	240,000	9.4
SOD-323	13	12,000	4.0	8	330	375 x 360 x 213	144,000	10
SOD-323	7	5,000	4.0	8	178	390 x 270 x 400	400,000	15.2
SOD-523	13	12,000	4.0	8	330	375 x 360 x 213	144,000	10
SOD-523	7	5,000	4.0	8	178	390 x 270 x 400	400,000	15.2
SOT-23	13	12,000	4.0	8	330	375 x 360 x 213	144,000	6.4
SOT-23	7	3,000	4.0	8	178	390 x 270 x 400	240,000	9.4
SOT-323	13	12,000	4.0	8	330	375 x 360 x 213	144,000	6.4
SOT-323	7	3,000	4.0	8	178	390 x 270 x 400	240,000	9.4
SOT-363	13	10,000	4.0	8	330	375 x 360 x 213	120,000	7.1
SOT-363	7	3,000	4.0	8	178	390 x 270 x 400	240,000	10.2
SOT-353	13	10,000	4.0	8	330	375 x 360 x 213	120,000	7.2
SOT-353	7	3,000	4.0	8	178	390 x 270 x 400	240,000	10
SOT23-6L	13	10,000	4.0	8	330	375 x 360 x 213	120,000	7.9
SOT23-6L	7	3,000	4.0	8	178	390 x 270 x 400	240,000	14.5
SOT-143	13	10,000	4.0	8	330	375 x 360 x 213	120,000	7
SOT-143	7	3,000	4.0	8	178	390 x 270 x 400	240,000	12.8
QFN 1.2 x 1.5	7	3,000	4.0	8	178	390 x 270 x 400	240,000	7.1
QFN 1.6 x 1.6	7	4,000	4.0	8	178	390 x 240 x 420	200,000	7.8
QFN 2.0 x 2.0	7	3,000	4.0	8	178	390 x 270 x 400	240,000	7.1
SOIC-08	13	3,000	8.0	12	330	375 x 360 x 390	48,000	14.2

Ammunition Packing

PACKAGE	AMMO	COMPONENT SPACE	TAPE SPACE	INNER BOX SIZE	CARTON SIZE	CARTON	APPROX. GROSS WEIGHT
	(pcs)	(m/m)	(m/m)	(m/m)	(m/m)	(EA)	(Kg)
Ammunition Packing							
A-405	5,000	5	26	255 x 47 x 150	339 x 276 x 330	60,000	12.4
A-405	5,000	5	52	255 x 75 x 150	339 x 276 x 330	40,000	16
DO-15	3,000	5	52	255 x 75 x 150	339 x 276 x 330	24,000	12.9
DO-201AD	1,250	10	52	255 x 47 x 122	339 x 276 x 330	10,000	13.3
DO-201AE	1,250	10	52	255 x 47 x 122	339 x 276 x 330	10,000	13.3
DO-34	5,000	5	26	248 x 80 x 48	406 x 335 x 257	150,000	14.7
DO-34	5,000	5	52	248 x 80 x 75	406 x 335 x 257	100,000	12.4
DO-35	5,000	5	26	248 x 80 x 48	406 x 335 x 257	150,000	16.7
DO-35	5,000	5	52	248 x 80 x 75	406 x 335 x 257	100,000	15
DO-41	5,000	5	52	255 x 75 x 150	339 x 276 x 330	40,000	16.6
DO-41G	2,500	5	26	248 x 80 x 48	406 x 335 x 257	75,000	22.7
DO-41G	2,500	5	52	248 x 80 x 75	406 x 335 x 257	50,000	15.7
P-600	400	10	52	255 x 47 x 122	339 x 276 x 330	3,200	7.8
R-1	3,000	5	26	255 x 47 x 73	310 x 268 x 170	36,000	6.8
R-1	3,000	5	52	256 x 73 x 73	310 x 268 x 170	24,000	6.2
R-1	5,000	5	52	255 x 73 x 122	339 x 276 x 274	40,000	10.1