

# APPROVE SHEET

Customer : \_\_\_\_\_

Customer Part Number : RS2MF-LE

PanJit Part Number : RS2MF-LE

Issue Date : 6/29/2016

Approver Signature :

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# RS2MF-LE

## SMALL SURFACE MOUNT FAST DIODES

**Voltage**

**1000 V**

**Current**

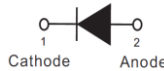
**2A**

### Features

- For surface mounted applications in order to optimize board space
- Ultra thin profile package for space constrained utilization
- Easy pick and place package suitable for automated handling
- Package suitable for automated handling
- Ideal for automated placement
- Glass passivated chip junction
- High temperature soldering : 260 °C / 10 seconds at terminals
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Green molding compound as per IEC61249 Std..(Halogen Free)

### Mechanical Data

- Case: Molded plastic, SMAF-1
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color Band denotes cathode end
- Approx. Weight: 0.001 ounces, 0.027 grams



### Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	1000	V
Maximum rms voltage	$V_{RMS}$	700	V
Maximum dc blocking voltage	$V_R$	1000	V
Maximum average forward current	$I_{F(AV)}$	2	A
Peak forward surge current : 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	60	A
Maximum forward voltage at 2A	$V_F$	1.3	V
Maximum dc reverse current	$I_R$	5	$\mu\text{A}$
Typical junction capacitance Measured at 1MHZ and applied $V_r=4$ volts.	$C_J$	16	pF
Typical thermal resistance (Note 1)	$R_{\theta JA}$	150	$^{\circ}\text{C}/\text{W}$
(Note 2)	$R_{\theta JL}$	22	
Maximum reverse recovery time (Note 3)	$T_{RR}$	500	ns
Operating and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^{\circ}\text{C}$

Note : 1. Mounted on a FR4 PCB, single-sided copper, mini pad

2. Mounted on a FR4 PCB, single-sided copper, with 100cm<sup>2</sup> copper pad area

3. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_{RM}= -1\text{A}$ , Recover to -0.25A



# RS2MF-LE

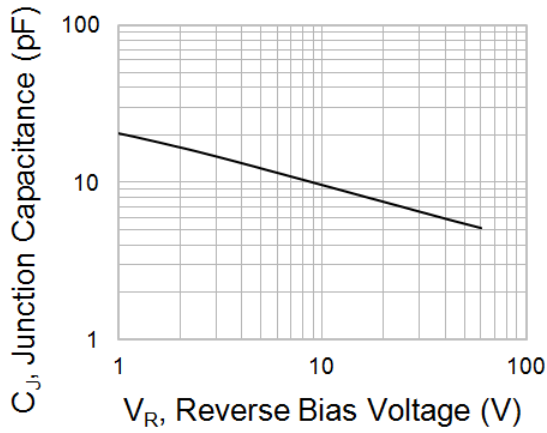


Fig.1 Typical Junction Capacitance

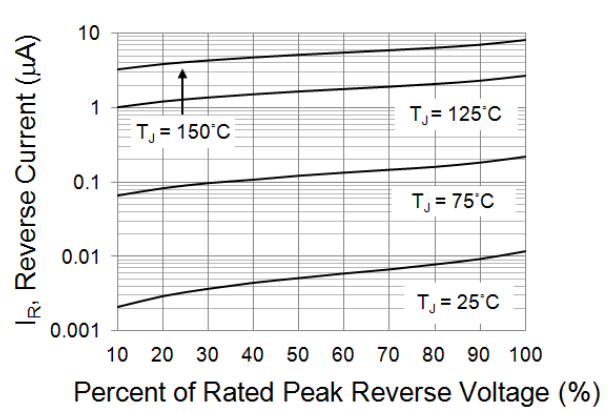


Fig.2 Typical Reverse Characteristics

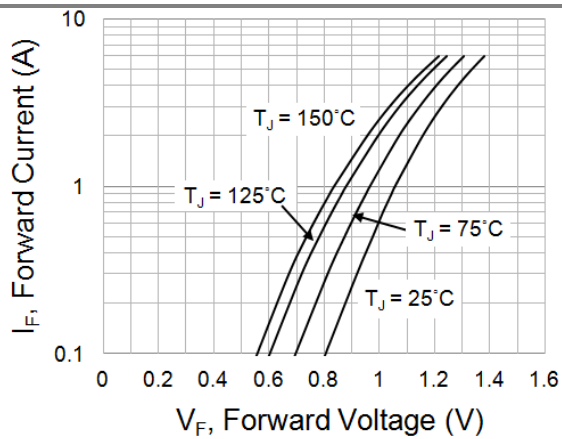


Fig.3 Typical Forward Characteristics



# RS2MF-LE

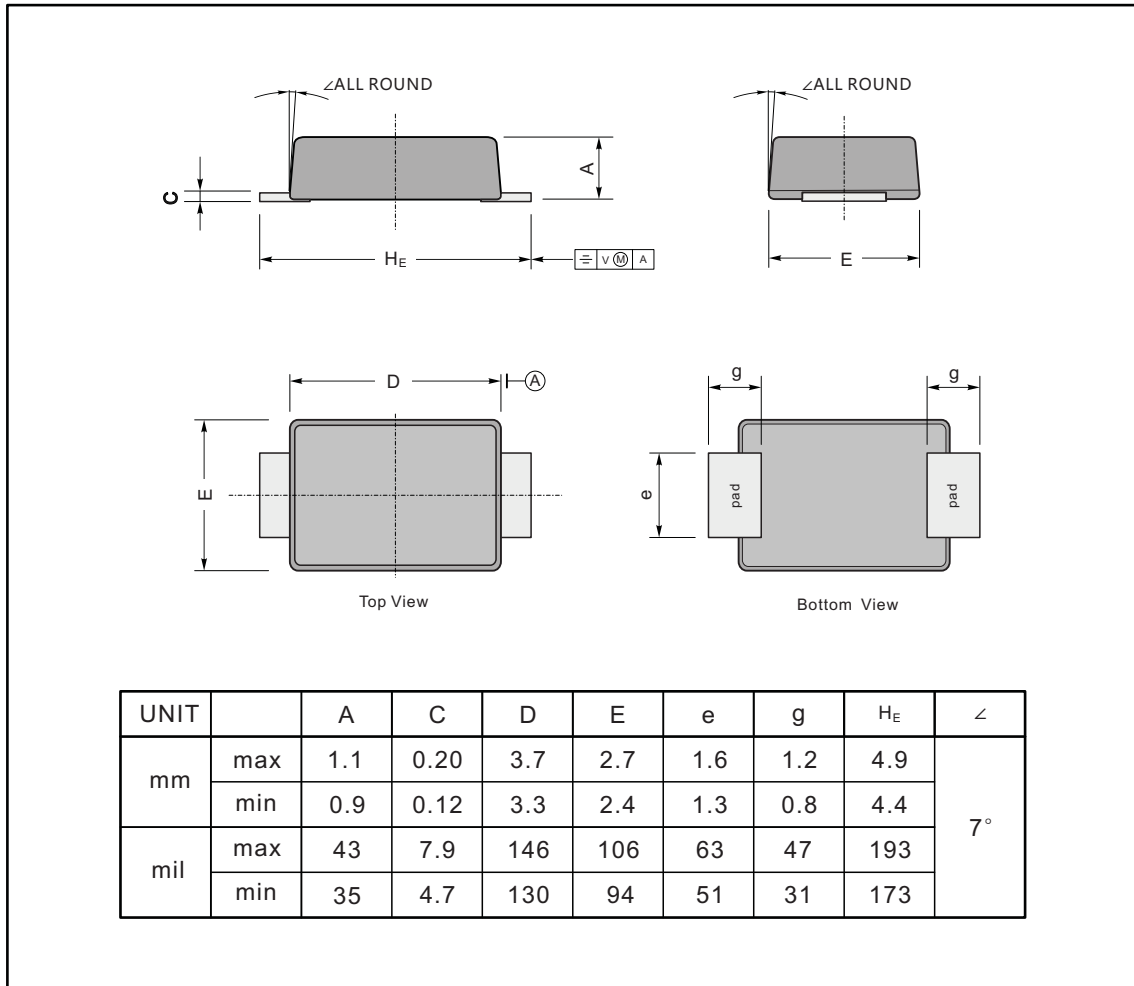
## PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
RS2MF-LE_R1_00001	SMAF-1	3K pcs / 7" reel	LRS2MF	Halogen free
RS2MF-LE_R2_00001	SMAF-1	10K pcs / 13" reel	LRS2MF	Halogen free

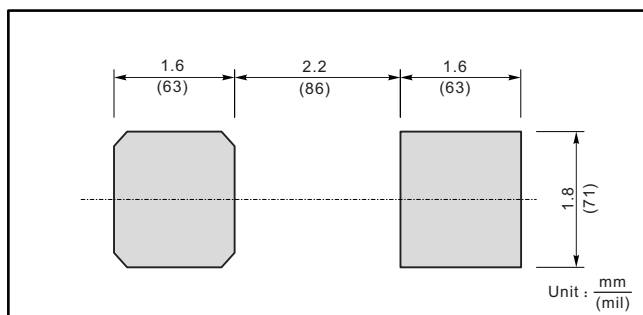


# RS2MF-LE

## Package Outline



## Pad Layout





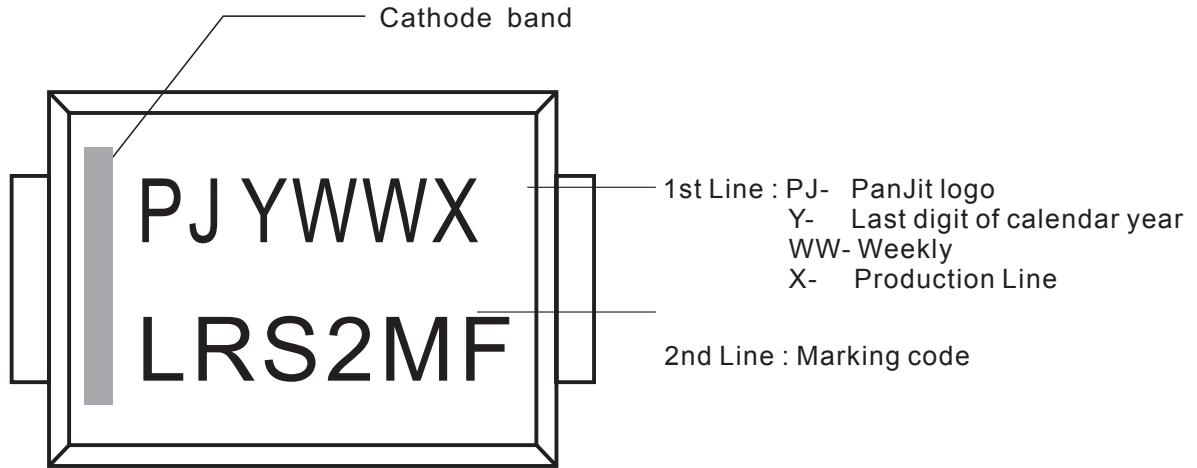
## RS2MF-LE

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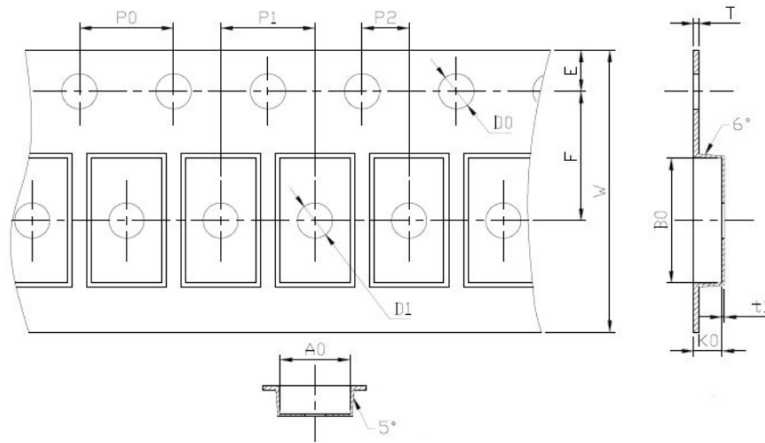
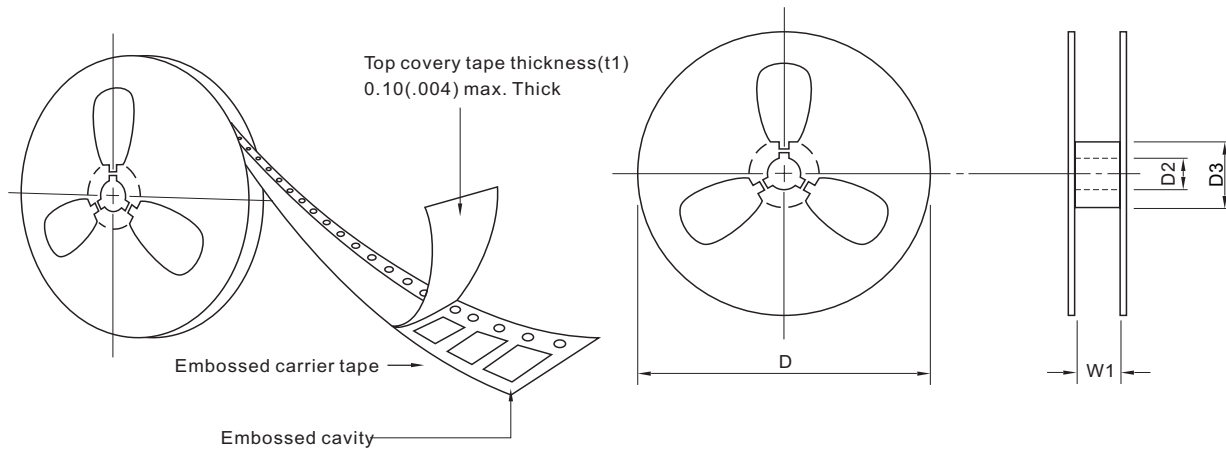
## 2. MARKING







### 3. TAPING



SYMBOL	mm(inch)
TYPE SIZE	12.00(0.472)
D2	13.5 ± 0.5 (0.532 ± 0.020)
D3	57min(2.24)
W1	13.7~16.7maximum(0.54~0.66)
D	178 ± 1.0 (7 ± 0.04)
Do	1.55 ± 0.05 (0.061 ± 0.002)
D1	1.50 ± 0.10 (0.059 ± 0.004)
E	1.75 ± 0.10 (0.069 ± 0.004)
F	5.50 ± 0.10 (0.217 ± 0.004)
Po	4.00 ± 0.10 (0.157 ± 0.004)
P1	4.00 ± 0.10 (0.157 ± 0.004)
P2	2.00 ± 0.05 (0.079 ± 0.002)
W	12+0.3/-0.1 (0.472+0.011/-0.004)
A0	2.90 ± 0.10 (0.114 ± 0.004)
B0	5.35 ± 0.10 (0.210 ± 0.004)
K0	1.15 ± 0.10 (0.045 ± 0.004)
T	0.26 ± 0.02 (0.010 ± 0.001)
t1	0.05 ↑ (0.002) ↑

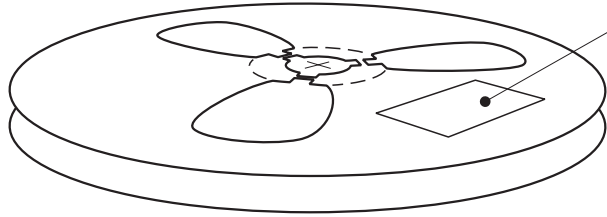
NOTE:

1. There shall be leader of 320 mm minimum which may consist of carrier and or cover tape follower by a minimum of 128 mm of carrier tape sealed with cover tape.
2. There shall be minimum of 128 mm of empty component pockets sealed with cover tape.
3. Devices are packed in accordance with EIA standard EIA-481-A and specifications given above.



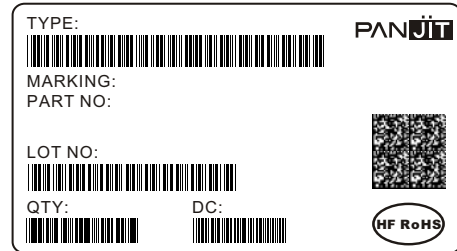
## 4. PACKING

### REEL PACKING

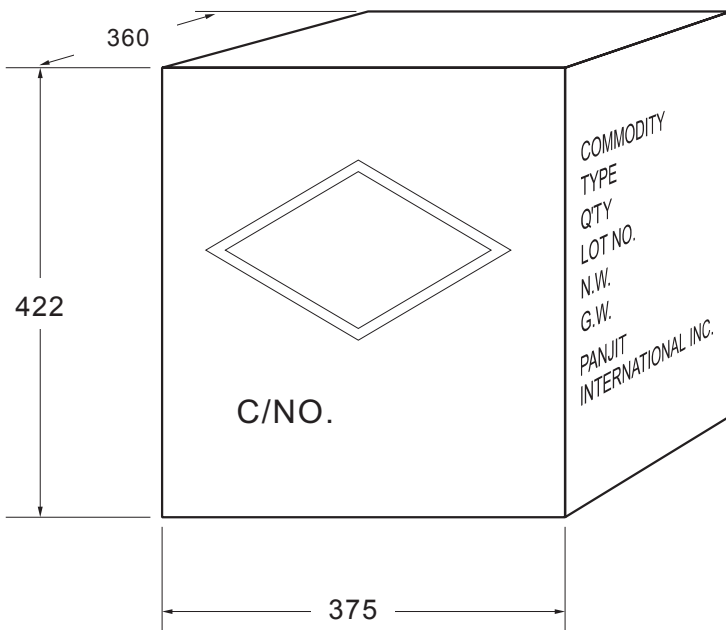


Quantity per Reel: 10,000 pcs

#### LABEL TYPE

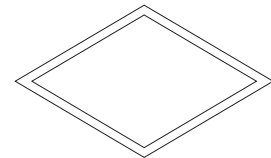


### CARTON



Box Dimensions : mm  
Quantity per Box: 160,000 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	Component Space	Tape Space	Reel Dia	Carton Size	Carton	Approx. Gross Weight
	(inch)	(pcs)	(mm)	(mm)	(mm)	(mm)	(EA)	(kg)
Reel Packing								
DFN0603	7	10,000	2	8	178	390 x 270 x 400	800,000	9
DFN 2L	7	8,000	2	8	178	390 x 270 x 400	640,000	8.6
DFN 3L	7	8,000	2	8	178	390 x 270 x 400	640,000	8.6
	13	12,000	4	8	330	375 x 360 x 230	144,000	7.6
DFN2510-10L	7	5,000	4	8	178	390 x 270 x 400	400,000	10.5
	13	12,000	4	8	330	375 x 360 x 230	144,000	6.4
DFN2020-6L	7	3,000	4	8	178	390 x 270 x 400	240,000	10.1
DFN2020B-6L(ESD)	7	3,000	4	8	178	455 x 270 x 440	240,000	12.3
DFN2020-8L	7	3,000	4	8	178	390 x 270 x 400	240,000	10.1
DFN3030-8L	7	5,000	8	12	330	375 x 360 x 422	70,000	7.3
DFN5060-8L	13	3,000	8	12	330	375 x 360 x 422	42,000	8.5
SC-59(ESD)	7	3,000	4	8	178	455 x 270 x 440	240,000	9.9
SOP-8	13	2,500	8	12	330	375 x 360 x 230	20,000	5.7
SOD-923	7	8,000	2	8	178	390 x 270 x 400	640,000	7.7
SOD-523	7	5,000	4	8	178	390 x 270 x 400	400,000	9.1
	13	12,000	4	8	330	375 x 360 x 230	144,000	5.4
SOD-323HE	7	5,000	4	8	178	390 x 270 x 400	400,000	11.9
	13	12,000	4	8	178	375 x 360 x 230	144,000	8.3
SOD-323	7	5,000	4	8	178	390 x 270 x 400	400,000	9.4
	13	12,000	4	8	330	375 x 360 x 230	144,000	5.9
SOD-123HE	7	3,000	4	8	178	390 x 270 x 400	240,000	12.4
	13	10,000	4	8	330	375 x 360 x 230	120,000	8.1
SOD-123FL	7	3,000	4	8	178	390 x 270 x 400	240,000	10.6
	13	10,000	4	8	330	375 x 360 x 230	120,000	7.2
SOD-123FL-1	7	3,000	4	8	178	390 x 270 x 400	240,000	10.6
	13	10,000	4	8	330	375 x 360 x 230	120,000	7.2
SOD-123	7	3,000	4	8	178	390 x 270 x 400	240,000	9.9
	13	10,000	4	8	330	375 x 360 x 230	120,000	6.5
SOT-723	7	8,000	2	8	178	455 x 270 x 440	640,000	10.5
SOT-563	7	8,000	2	8	178	390 x 270 x 400	640,000	9.4
	13	20,000	2	8	330	375 x 360 x 230	240,000	5.2
SOT-553	7	4,000	4	8	178	390 x 270 x 400	320,000	9.4
	13	10,000	4	8	330	375 x 360 x 230	120,000	5.2
SOT-543	7	4,000	4	8	178	390 x 270 x 400	320,000	9.4
	13	10,000	4	8	330	375 x 360 x 230	120,000	5.2
SOT-523	7	4,000	4	8	178	390 x 270 x 400	320,000	10
SOT-363	7	3,000	4	8	178	390 x 270 x 400	240,000	9.3
	13	10,000	4	8	330	375 x 360 x 230	120,000	7.1
SOT-353	7	3,000	4	8	178	390 x 270 x 400	240,000	10
	13	10,000	4	8	330	375 x 360 x 230	120,000	7.2
SOT-23 6L	7	3,000	4	8	178	390 x 270 x 400	240,000	14.5
	13	10,000	4	8	330	375 x 360 x 230	120,000	7.9
SOT-23 6L-1	7	3,000	4	8	178	390 x 270 x 400	240,000	14.5
	13	10,000	4	8	330	375 x 360 x 230	120,000	7.9
SOT-23 5L	7	3,000	4	8	178	390 x 270 x 400	240,000	14.5
	13	10,000	4	8	330	375 x 360 x 230	120,000	7.9
SOT-323	7	3,000	4	8	178	390 x 270 x 400	240,000	7.9
	13	12,000	4	8	330	375 x 360 x 230	144,000	6.1
SOT-23-1	7	3,000	4	8	178	390 x 270 x 400	240,000	9.8
	13	12,000	4	8	330	375 x 360 x 230	144,000	7
SOT-23	7	3,000	4	8	178	390 x 270 x 400	240,000	9.8
	13	12,000	4	8	330	375 x 360 x 230	144,000	7
SOT-223	13	2,500	4	8	330	375 x 360 x 422	35,000	13.2
SOT-89(ESD)	7	1,000	4	8	178	455 x 270 x 440	80,000	15.6



**Packing Specifications**

Package	Reel Size	Reel	Component Space	Tape Space	Reel Dia	Carton Size	Carton	Approx. Gross Weight
	(inch)	(pcs)	(mm)	(mm)	(mm)	(mm)	(EA)	(kg)
Reel Packing								
SMAF	7	3,000	4	12	178	390 x 240 x 420	120,000	10.9
	13	10,000	4	12	330	375 x 360 x 422	160,000	17.1
SMBF	7	1,500	8	12	178	390 x 240 x 420	60,000	9.6
	13	5,000	8	12	330	375 x 360 x 422	80,000	15.6
SMA(W)	7	1,800	4	12	178	390 x 240 x 420	100,800	13
	13	7,500	4	12	330	355 x 355 x 400	150,000	20.4
SMA/DO-214AC	7	1,800	4	12	178	390 x 240 x 420	72,000	10
	13	7,500	4	12	330	375 x 360 x 390	120,000	17.4
SMB/DO-214AA	7	500	8	12	178	390 x 240 x 420	20,000	6.5
	13	3,000	8	12	330	375 x 360 x 390	48,000	13.2
SMC/DO-214AB	7	500	8	16	178	390 x 240 x 420	15,000	8.4
	13	3,000	8	16	330	375 x 360 x 390	42,000	18
R-1	13	5,000	5	52	330	340 x 340 x 410	25,000	7.8
A-405	13	5,000	5	52	330	340 x 340 x 410	25,000	7.79
DO-41	13	5,000	5	52	330	340 x 340 x 410	25,000	11.1
DO-15	13	4,000	5	52	330	340 x 340 x 410	20,000	11.4
DO-201AD	13	1,250	10	52	330	340 x 340 x 410	6,250	9.2
DO-201AE	13	1,250	10	52	330	340 x 340 x 410	6,250	9.2
P-600	13	800	10	52	330	340 x 340 x 410	4,000	9.9
DO-34	15	10,000	5	52	360	360 x 360 x 395	50,000	10.1
DO-35	15	10,000	5	52	360	360 x 360 x 395	50,000	11.2
DO-41G	15	5,000	5	52	360	360 x 360 x 395	25,000	10.9
MICRO-MELF	7	2,500	4	-	178	385 x 380 x 260	200,000	9.3
	13	10,000	4	-	330	360 x 360 x 395	200,000	11.5
QUADRO-MELF	7	2,500	4	-	178	385 x 380 x 260	200,000	13.3
	13	10,000	4	-	330	360 x 360 x 395	200,000	14.9
MINI-MELF/LL-34	7	2,500	4	-	178	385 x 380 x 260	200,000	12.7
	13	10,000	4	-	330	360 x 360 x 395	200,000	14.6
MELF/DL-41	7	1,500	4	-	178	385 x 380 x 260	84,000	18.3
	13	5,000	4	-	330	360 x 360 x 395	100,000	23.5
MDI	13	3,000	8	12	330	375 x 360 x 390	48,000	14.7
MICRO DIP/TDI/LTDI	7	1,000	8	12	178	390 x 240 x 420	40,000	9.5
	13	4,000	8	12	330	375 x 360 x 422	64,000	17
SDIP	13	1,500	12	16	330	375 x 360 x 390	21,000	14.3
TO-277	13	5,000	8	12	330	375 x 360 x 422	80,000	20.6
TO-277B	13	5,000	8	16	330	375 x 360 x 422	80,000	21.8
TO-252	13	3,000	8	16	330	375 x 360 x 422	42,000	20.1
TO-252AA	13	3,000	8	16	330	375 x 360 x 422	42,000	18.8
TO-263/D <sup>2</sup> PAK	13	800	16	24	330	375 x 360 x 422	6,400	14.7



**Packing Specifications**

Package	Inner Box Size	Box	Carton Size	Carton	Approx. Gross Weight
	(mm)	(EA)	(mm)	(EA)	(kg)
Bulk Packing					
R-1	198 x 84 x 20	1,000	459 x 214 x 256	50,000	12.7
A-405	198 x 84 x 20	1,000	459 x 214 x 256	50,000	12.7
DO-41	198 x 84 x 20	1,000	459 x 214 x 256	50,000	19.3
DO-15	200 x 85 x 25	1,000	459 x 214 x 256	40,000	20.7
DO-201AD	200 x 85 x 40	500	459 x 214 x 256	12,500	16
DO-201AE	200 x 85 x 40	500	459 x 214 x 256	12,500	16
P-600	208 x 82 x 40	100	459 x 214 x 256	2,500	11.3
DO-34	240 x 100 x 90	2,000	406 x 335 x 257	120,000	14.5
DO-35	240 x 100 x 90	2,000	406 x 335 x 257	120,000	17.1
DO-41G	240 x 100 x 90	1,000	406 x 335 x 257	60,000	18.5
TO-220AC	540 x 145 x 85	2,000	555 x 306 x 200	8,000	22.9
ITO-220AC	540 x 145 x 85	2,000	555 x 306 x 200	8,000	20.5
TO-220AB	540 x 145 x 85	2,000	555 x 306 x 200	8,000	22.9
ITO-220AB	540 x 145 x 85	2,000	555 x 306 x 200	8,000	20.5
ITO-220AB-F	540 x 145 x 85	2,000	555 x 306 x 200	8,000	20.5
TO-251AA	555 x 145 x 95	8,000	580 x 310 x 220	32,000	18.6
TO-251AB	555 x 145 x 95	8,000	580 x 310 x 220	32,000	18.6
TO-263/D <sup>2</sup> PAK	540 x 145 x 82	2,000	555 x 306 x 188	8,000	15.42
TO-92	188 x 188 x 67	5,000	390 x 420 x 240	50,000	13
TO-3PN	-	-	600 x 185 x 230	1,800	16.4
TO-3PL	-	-	530 x 255 x 110	1,500	12.2
TO-3P/TO-247AD	-	-	530 x 243 x 100	1,500	13.9
TO-3PS/TO-247S	-	-	511 x 243 x 107	1,500	12.2
DIP	-	-	459 x 214 x 256	12,000	6.5
SDIP	-	-	459 x 214 x 256	24,000	15.7

Package	Inner Box Size	Ammo	Component Space	Tape Space	Carton Size	Carton	Approx. Gross Weight
	(mm)	(pcs)	(mm)	(mm)	(mm)	(EA)	(kg)
Ammunition Packing							
R-1	255 x 47 x 73	3,000	5	26	310 x 268 x 170	36,000	6.3
	255 x 73 x 73	3,000	5	52	310 x 268 x 170	24,000	6.3
	255 x 73 x 122	5,000	5	52	339 x 276 x 274	40,000	10.3
A-405	255 x 47 x 150	5,000	5	26	339 x 276 x 330	60,000	12.4
	255 x 75 x 150	5,000	5	52	339 x 276 x 330	40,000	16
DO-41	255 x 75 x 150	5,000	5	52	339 x 276 x 330	40,000	15.9
	255 x 73 x 90	3,000	5	52	333 x 281 x 218	24,000	8.9
DO-15	255 x 75 x 150	3,000	5	52	339 x 276 x 330	24,000	13.3
DO-201AD	255 x 47 x 122	1,250	10	52	339 x 276 x 330	10,000	13.4
DO-201AE	255 x 47 x 122	1,250	10	52	339 x 276 x 330	10,000	13.4
P-600	255 x 47 x 122	400	10	52	339 x 276 x 330	3,200	8.1
DO-34	248 x 80 x 48	5,000	5	26	406 x 335 x 257	150,000	14.5
	248 x 80 x 75	5,000	5	52	406 x 335 x 257	100,000	12.7
DO-35	248 x 80 x 48	5,000	5	26	406 x 335 x 257	150,000	16.7
	248 x 80 x 75	5,000	5	52	406 x 335 x 257	100,000	15.2
DO-41G	248 x 80 x 48	2,500	5	26	406 x 335 x 257	75,000	17.1
	248 x 80 x 75	2,500	5	52	406 x 335 x 257	50,000	15.6
DO-9	265 x 238 x 38	6	-	-	455 x 270 x 440	60	18.9

## 5. HIGH RELIABILITY TEST SPEC

NO.	TEST ITEM	TEST CONDITION	Time	SS
1	TEMPERATURE CYCLING (T.C.T) 溫度循環試驗	Ta = -55 +/- 10min Ta = +150 +/- 10min	200CYCLES	LTPD 10 S.s=22 pcs
2	HIGH TEMPERATURE STORAGE LIFE(H.T.S.L) 高溫儲存壽命試驗	Ta= Storage Temperature Range (device specified maximum temperature)	168hrs	LTPD 10 S.s=22 pcs
3	SOLDERABILITY TEST 錫錫性試驗	TEMPERATURE OF SOLDER POT = 245 +/- 5°C TIME FOR DIPPING IN SOLDER = 5 +/- 0.5 SEC	1 CYCLE	LTPD 7 S.s=10pcs
4	HIGH TEMPERATURE REVERSE BIAS (H.T.R.B) 高溫逆向偏壓	Tj ≤ Tj max VR=0.8VR	168hrs	LTPD 10 S.s=22 pcs
5	CONTINUE FORWARD OPERATING LIFE (C.F.O.L) 順向連續通電	I=I <sub>0</sub> +/- 10% DC supply	168hrs	LTPD 10 S.s=22 pcs
6	THERMAL SHOCK (T.S.T)冷熱衝擊試驗	HOT TANK Ta=100+10/- t= 5min COLD TANK Ta=0+2/- t= 5min	100CYCLES	LTPD 10 S.s=22 pcs
7	PRESSURE COOKER (P.C.T) 壓力鍋試驗	Ta= 121°C P= 29.7psia / 205kPa or /cm <sup>2</sup> Relative Humidity = 100%	96hrs 不作precon	LTPD 10 S.s=22 pcs
8	INTERMITTENT FORWARD OPERATING LIFE(I.F.O.L) 順向斷續通電	I=I <sub>0</sub> ×1.0 DC supply POWER ON: at least 30 SEC POWER OFF: 50 SEC	2000CYCLES 不作precon	LTPD 10 S.s=22 pcs
9	FORWARD SURGE CURRENT 順向突波電流測試	SQ WAVE OR SINE WAVE IFSM = DATE SHEET SPEC.	1 CYCLE	LTPD 10 S.s=22 pcs
10	HUMIDITY 恆溫濕試驗	Ta=85 +/-2°C RH=85+/-5%	168hrs	LTPD 10 S.s=22 pcs
11	SOLDER RESISTANCE 錫錫耐熱性試驗	TEMPERATURE OF SOLDER POT = 260 +/- 5°C TIME FOR DIPPING IN SOLDER = 10+2/-0 SEC	1 CYCLE	LTPD 10 S.s=22 pcs