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SB4045LCT

LOW VF SCHOTTKY RECTIFIER

VOLTAGE 45 Volts **CURRENT** 40 Amperes

FEATURES

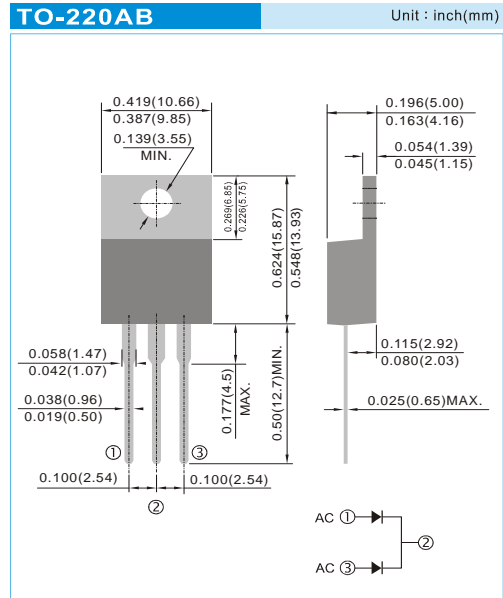
- Low forward voltage drop, low power losses
- High efficiency operation
- Lead free in comply with EU RoHS 2002/95/EC directives

MECHANICAL DATA

Case : TO-220AB, Plastic

Terminals : Solderable per MIL-STD-750, Method 2026

Weight: 0.0655 ounces, 1.859 grams



MAXIMUM RATINGS($T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum average forward rectified current	$I_{F(AV)}$	40 20	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	250	A
Typical Thermal Resistance per diode ⁽³⁾	$R_{\theta JC}$	1.9	$^{\circ}\text{C}/\text{W}$
Operating junction temperature range	T_J	-55 to + 150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to + 150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Breakdown voltage	V_{BR}	$I_R=1\text{mA}$	45	-	-	V
Instantaneous forward voltage per diode ⁽¹⁾	V_F	$I_F=5\text{A}$	-	0.38	-	V
		$I_F=10\text{A}$	-	0.43	-	V
		$I_F=20\text{A}$	-	0.51	0.53	V
		$I_F=5\text{A}$	-	0.27	-	V
Reverse current per diode ⁽²⁾	I_R	$V_R=36\text{V}$	-	112	-	μA
		$V_R=45\text{V}$	-	-	500	μA
		$T_J=25^{\circ}\text{C}$ $T_J=125^{\circ}\text{C}$	-	120	-	mA

Note.1.Pulse test : 300 μs pulse width, 1% duty cycle

2.Pulse test : pulse width $\leq 40\text{ms}$

3.Mounted on infinite heatsink

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SB4045LCT

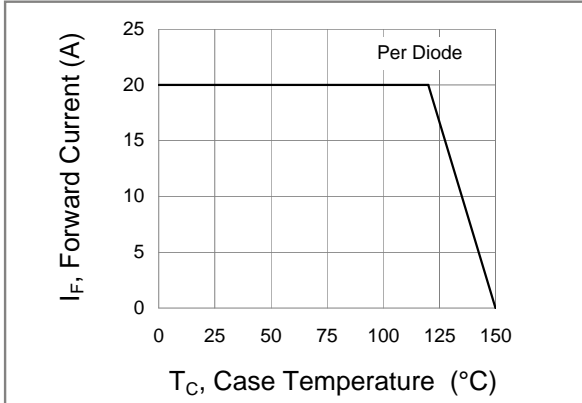


Fig.1 Forward Current Derating Curve

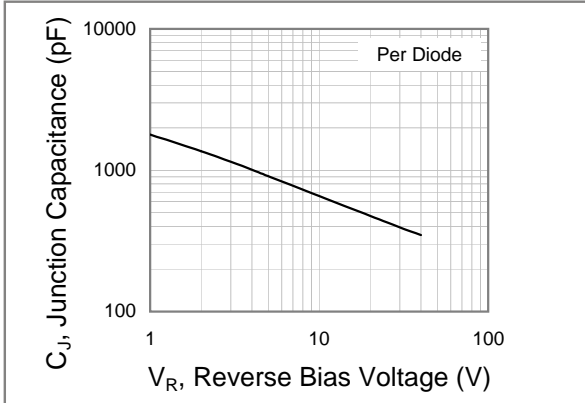


Fig.2 Typical Junction Capacitance

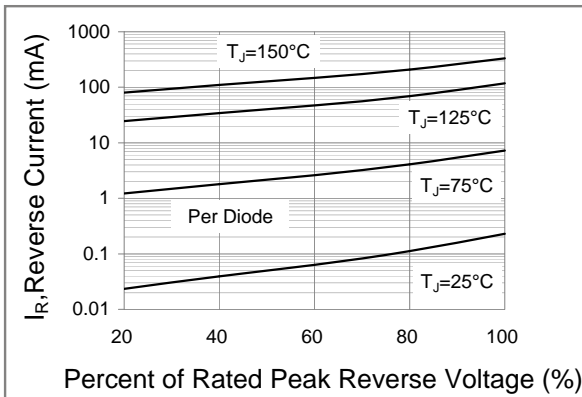


Fig.3 Typical Reverse Characteristics

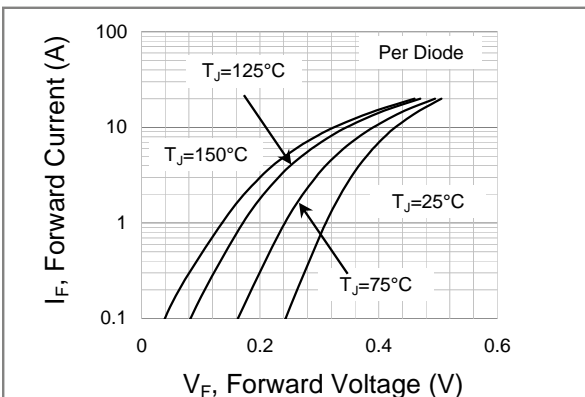


Fig.4 Typical Forward Characteristics



SB4045LCT

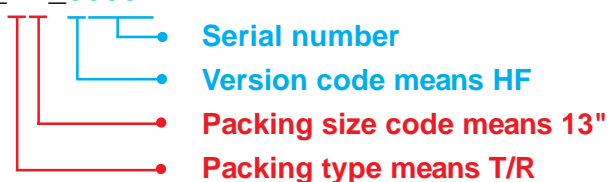
Part No_packing code_Version

SB4045LCT_T0_00001
 SB4045LCT_00001
 SB4045LCT_T0_10001
 SB4045LCT_10001

For example :

RB500V-40_R2_00001

Part No.



Packing type	Packing Code XX			Version Code XXXXX		
	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



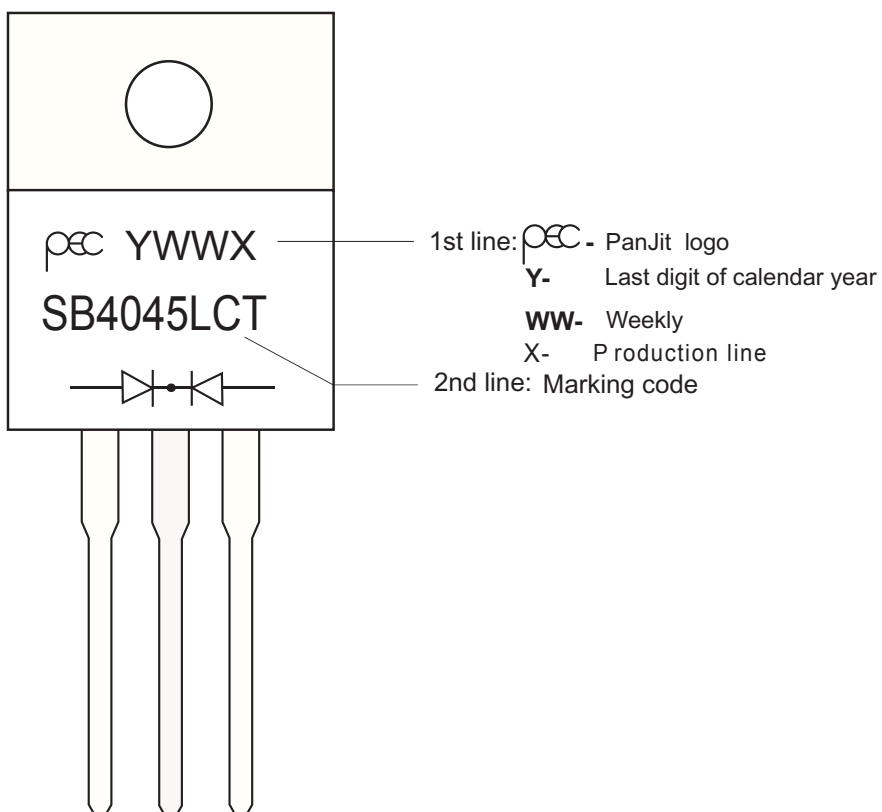
SB4045LCT

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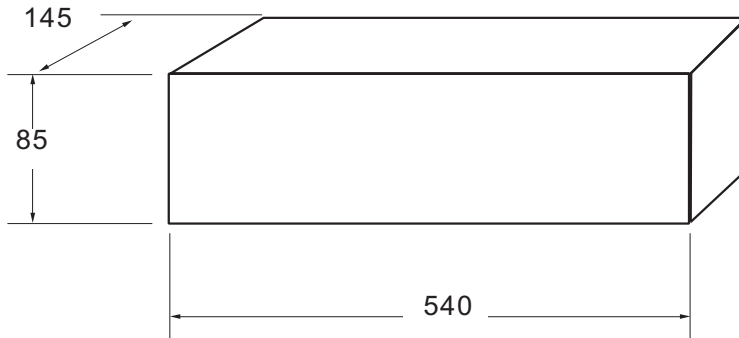
2. MARKING





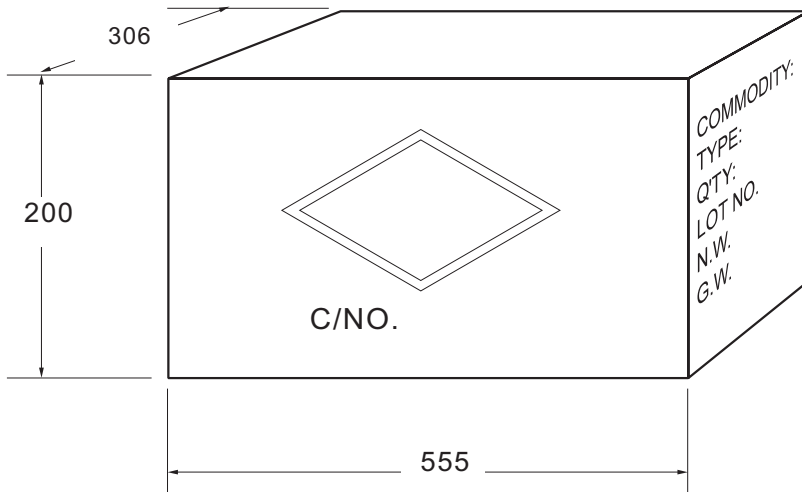
3. PACKING

INNER BOX



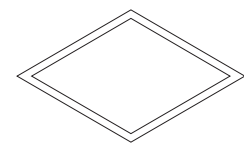
Box Dimensions : mm
Quantity per Carton: 2,000 pcs

CARTON



Box Dimensions : mm
Quantity per Box:8,000 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)	(m/m)	(m/m)	(m/m)	(m/m)	(EA)	(Kg)
Reel Packing								
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
DFN 0603	7	10,000	2	8	178	390 x 270 x 400	800,000	9
DFN1616-8L	7	5,000	4	8	178	390 x 270 x 400	400,000	10.4
	13	12,000	4	8	330	375 x 360 x 213	144,000	7.6
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 213	120,000	6.5
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 213	120,000	7.2
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 213	120,000	8.1
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 213	144,000	5.9
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 213	144,000	8.3
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 213	144,000	5.4
SOD-723	7	8,000	2	8	178	390 x 270 x 400	640,000	8.5
SOD-923	7	8,000	2	8	178	390 x 270 x 400	640,000	7.7
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 213	144,000	7
SOT-23 (ESD)	7	3,000	4	8	178	455 x 270 x 440	240,000	9.9
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 213	120,000	7.9
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 213	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 213	144,000	6.1
SOT-323 (ESD)	7	3,000	4	8	178	455 x 270 x 440	240,000	9.4
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 213	120,000	7.2
SOT-363	7	3,000	4	8	178	390 x 270 x 400	240,000	10.2
	13	10,000	4	8	330	375 x 360 x 213	120,000	7.1
SOT-363 (ESD)	7	3,000	4	8	178	455 x 270 x 440	240,000	10
SOT-523	7	4,000	4	8	178	390 x 270 x 400	320,000	10
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 213	120,000	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 213	120,000	5.2
SOT-563	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 213	120,000	5.2



Packing Specifications

Package	Reel Size	Reel	Component Space	Tape Space	Reel Dia	Carton Size	Carton	Approx. Gross Weight
	(inch)	(pcs)	(m/m)	(m/m)	(m/m)	(m/m)	(EA)	(Kg)
Reel Packing								
A-405	13	5,000	5	52	330	340 x 340 x 410	25,000	7.79
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
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-41	13	5,000	5	52	330	340 x 340 x 410	25,000	11.1
DO-41G	15	5,000	5	52	360	360 x 360 x 395	25,000	10.9
MDI	13	3,000	8	12	330	375 x 360 x 390	48,000	14.7
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
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
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
MICRO DIP/TDI	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 390	64,000	17
P-600	13	800	10	52	330	340 x 340 x 410	4,000	9.9
QUADRO-MELF	13	10,000	4	-	330	360 x 360 x 395	200,000	14.9
	7	2,500	4	-	178	385 x 380 x 260	200,000	13.3
R-1	13	5,000	5	52	330	340 x 340 x 410	25,000	7.8
SDIP	13	1,500	12	16	330	375 x 360 x 390	21,000	14.3
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
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 390	160,000	17.1
SMBF	13	5,000	8	12	330	375 x 360 x 390	80,000	15.6
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
TO-252/DPAK	13	3,000	8	16	330	375 x 360 x 390	42,000	18.8
TO-263/D ² PAK	13	800	16	24	330	375 x 360 x 390	6,400	14.5
TO-277	13	5,000	8	12	330	375 x 360 x 390	80,000	20.6



Packing Specifications

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	12.7
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	495 x 214 x 256	12,500	16
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-41	198 x 84 x 20	1,000	459 x 214 x 256	50,000	19.3
DO-41G	240 x 100 x 90	1,000	406 x 335 x 257	60,000	18.5
DIP	-	-	459 x 214 x 256	12,000	6.5
SDIP	-	-	459 x 214 x 256	24,000	15.7
R-1	198 x 84 x 20	1,000	459 x 214 x 256	50,000	12.7
P-600	208 x 90 x 83	500	459 x 214 x 256	5,000	11.3
ITO-220	540 x 145 x 85	2,000	555 x 306 x 200	8,000	20.5
TO-220	540 x 145 x 85	2,000	555 x 306 x 200	8,000	22.9
TO-251AB/DPAK	555 x 145 x 95	8,400	572 x 306 x 218	33,600	22
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

Package	Inner Box Size	Ammo	Component Space	Tape Space	Carton Size	Carton	Approx. Gross Weight
	(m/m)	(pcs)	(m/m)	(m/m)	(m/m)	(EA)	(Kg)
Ammunition Packing							
A-405	255 x 47 x 150	5,000	5	26	339 x 276 x 330	60,000	12.4
A-405	255 x 75 x 150	5,000	5	52	339 x 276 x 330	40,000	16
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
DO-34	248 x 80 x 48	5,000	5	26	406 x 335 x 257	150,000	14.5
DO-34	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
DO-35	248 x 80 x 75	5,000	5	52	406 x 335 x 257	100,000	15.2
DO-41	255 x 75 x 150	5,000	5	52	339 x 276 x 330	40,000	15.9
DO-41G	248 x 80 x 48	2,500	5	26	406 x 335 x 257	75,000	17.1
DO-41G	248 x 80 x 75	2,500	5	52	406 x 335 x 257	50,000	15.6
P-600	255 x 47 x 122	400	10	52	339 x 276 x 330	3,200	8.1
R-1	255 x 47 x 73	3,000	5	26	310 x 268 x 170	36,000	6.3
R-1	255 x 73 x 73	3,000	5	52	310 x 268 x 170	24,000	6.3
R-1	255 x 73 x 122	5,000	5	52	339 x 276 x 274	40,000	10.3

4.HIGH RELIABILITY TEST SPEC (Schottky & Switching & Rectifiers & Bridge)

Date : 2010.07.05 rev.01

NO.	TEST ITEM	TEST CONDITION	REFERENCED DOCUMENT	LOT QUALITY LEVEL
1	TEMPERATURE CYCLING (T.C.T) 溫度循環試驗	Ta = -55+0°C / -10°C 10min(Min) Ta = +150+15°C / -0°C 10min(Min) FOR 20CYCLES	MIL-STD-750D METHOD-1051.5 Condition G	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.
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)	MIL-STD-750D METHOD-1032.2	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.
3	SOLDERABILITY TEST 錫錫性試驗	Temperature of Solder TEMPERATURE OF SOLDER POT=245+/-5°C TIME FOR DIPPING IN SOLDER=5+/-0.5 SEC DIPPING DEPTH=0.05inch max from the body FOR ONE CYCLE	MIL-STD-750D METHOD-2026.10	LTPD 7 S.S=32 ACCEPT FOR 0 FAILURE ONLY.
4	HIGH TEMPERATURE REVERSE BIAS (H.T.R.B) 高溫逆向偏壓	Tj ≤ Tj max VR=0.8VR(CUSTOMER SPEC.) DC supply	MIL-STD-750D METHOD-1038.3	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.
5	CONTINUE FORWARD OPERATING LIFE(C.F.O.L) 連續通電	Ta=25°C I=Io+/-10% DC supply	MIL-STD-750D METHOD 1027.3	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.
6	THERMAL SHOCK (T.S.T) 冷熱衝擊試驗	HOT TANK Ta=100+10/-2°C t= 5min COLD TANK Ta=0+2/-10°C t= 5min 15 CYCLES TIME BETWEEN TRANSFERRING DO NOT EXCEED 10 SEC	MIL-STD-750D METHOD 1056.7	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.
7	PRESSURE COOKER (P.C.T) 壓力鍋試驗	Ta=121°C P=29.7psia / 205kPa or 2.088kg/cm ² Relative Humidity = 100%	JEDEC JESD22-A102-C	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.
8	INTERMITTENT FORWARD OPERATING LIFE (I.F.O.L) 斷續通電	I=Io x 1.0 DC supply POWER ON: at least 30 SEC POWER OFF: 50 SEC TESTING CYCLE: 2000CYCLES	MIL-STD-750D METHOD 1036.3	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.
9	FORWARD SURGE CURRENT 順向突波電流測試	SQ WAVE OR SINE WAVE IFSM=DATE SHEET SPEC. TIME=Single half sine wave T=1 CYCLE	MIL-STD-750D METHOD 4066-3	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.
10	HUMIDITY 恆溫濕試驗	Ta=85+/-2°C RH=85+/-5%	EIAJ ED-4701 METHOD 103	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.
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 DIPPING DEPTH=1.57+/-0.79mm FROM THE BODY FOR ONE CYCLE	MIL-STD-750D METHOD 2031.2	LTPD 10 S.S=22 ACCEPT FOR 0 FAILURE ONLY.