

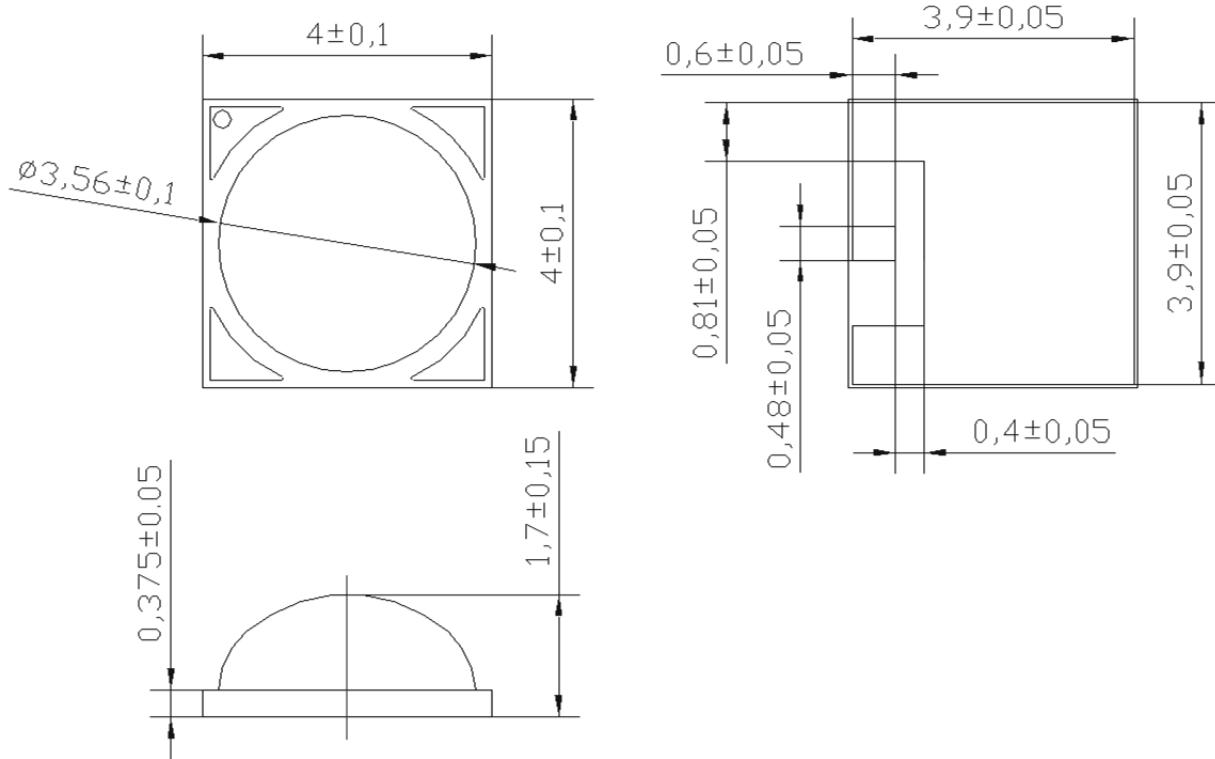


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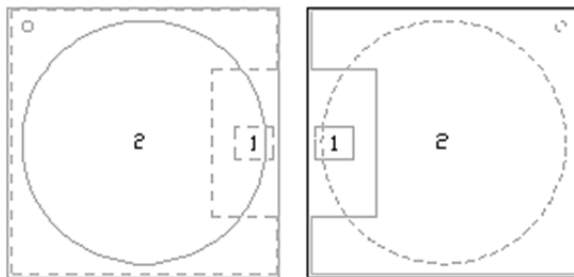
IRP-940C-140D

4.0 x 4.0 x 1.7 mm POWER IR SMD LED

PACKAGE OUTLINES



PAD CONFIGURATION



TOP

BOTTOM

PAD	Function
1	Cathode
2	Anode, Thermal

Note: unit (mm); tolerance ± 0.05

Part Number	Chip Material	Viewing Angle
IRP-940C-140D	AlGaAs/AlGaAs AlGaAs/GaAs	140°

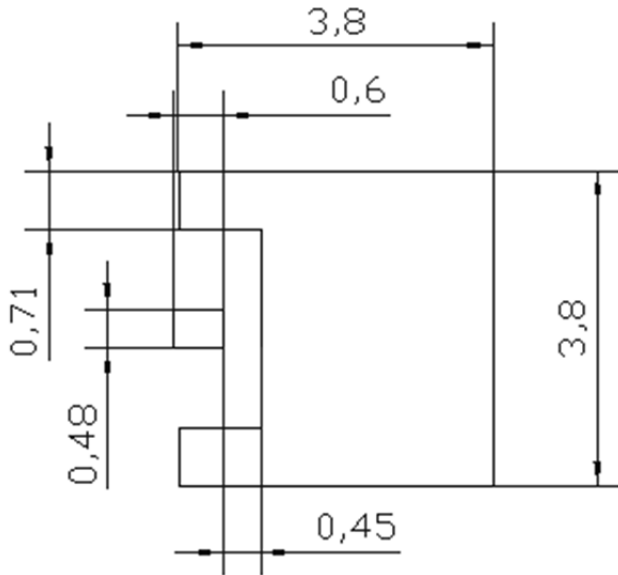


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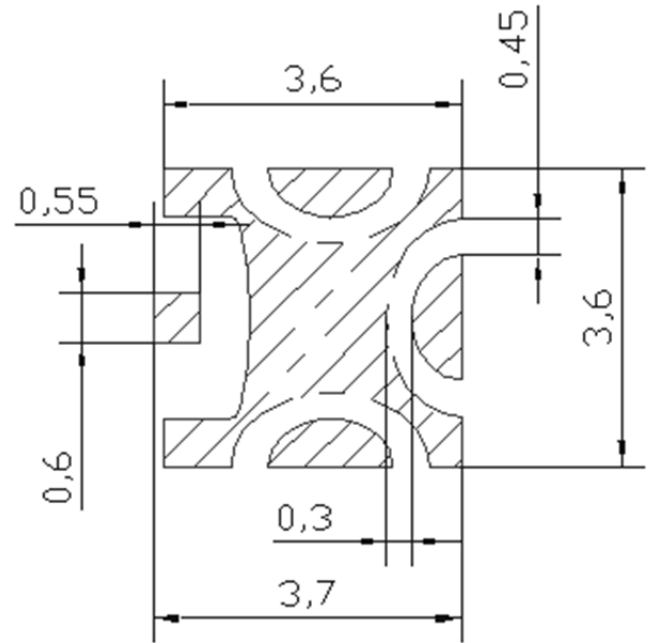
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RECOMMENDED SOLDER PATTERN



MCPCB LAYOUT



SOLDER MASK

Note: unit (mm); tolerance ± 0.05



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Value	Unit
Forward Current	I_F	1000	mA
Forward Pulse Current* (1/10 Duty Cycle, 400msec Pulse Width)	I_{FP}	1500	mA
Switching Times (If 1500mA)	T_r/T_f	15/18	ns
Power Dissipation	P_D	2.5	W
Thermal Resistance, Junction-Case	$R_{th, J-C1}$	5	°C/W
Reverse Voltage	V_R	5	V
LED Junction Temperature	T_J	125	°C
Operating Temperature Range	T_{OPR}	-40~+80	°C
Storage Temperature Range	T_{STG}	-40~+120	°C
Soldering Condition	T_{SOL}	260°C for 5 seconds	

*Note: Forward Pulse Current=1/10 Duty Cycle, 400msec Pulse Width

OPTICAL-ELECTRO CHARACTERISTICS

(Ta=25°C)

Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Forward Voltage	$I_F=1000mA$	V_F	--	1.9	--	V
Radiant Flux		Φ_e	500	800	--	mW
Radiant Intensity		I_e	--	200	--	mW/sr
Peak Wavelength		λ_P	930	--	950	nm
Spectral Half-Width		$\Delta\lambda$	--	40	--	nm
Reverse Current	$V_R=5V$	I_R	--	--	100	μA



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BIN CODES

Item	Bin Code	Symbol	Condition	Min	Max	Unit
Forward Voltage ¹	B	V_F	$I_F=1000\text{ mA}$	1.59	1.83	V
	C			1.83	2.07	
	D			2.07	2.31	
	E			2.31	2.55	
Radiant Flux ²	F	Φ_E	$I_F=1000\text{ mA}$	500	600	mW
	G			600	700	
	H			700	800	
	J			800	900	

Note:

1. Forward voltage measurement allowance is $\pm 0.1V$
2. Luminous flux & Radiant flux measurement allowance is $\pm 10\%$

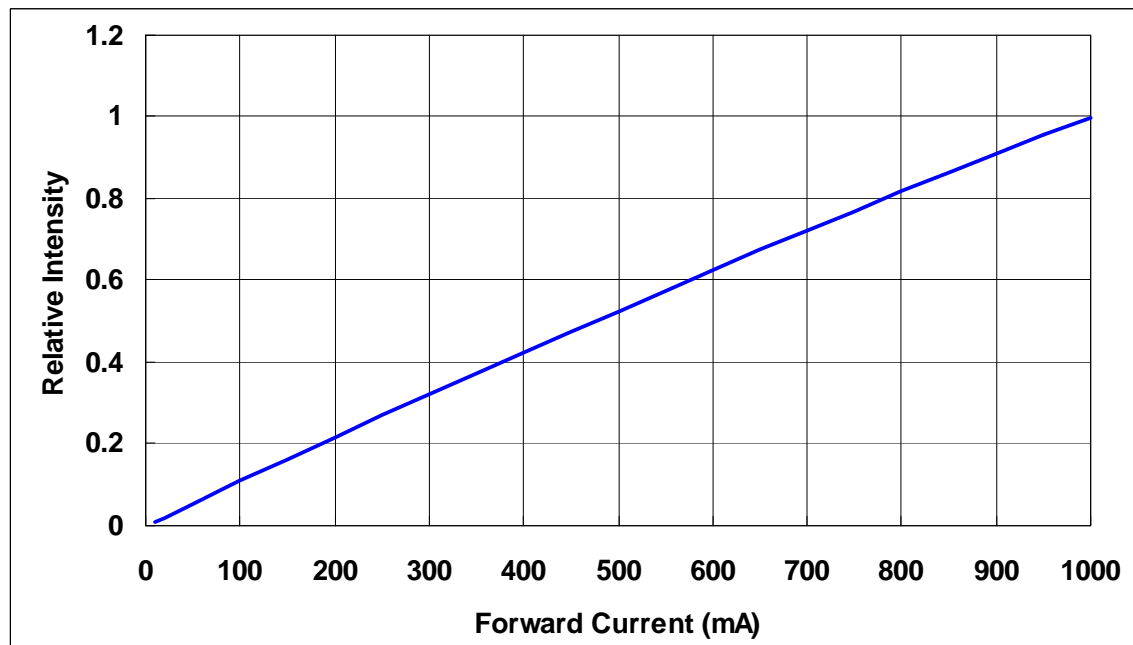
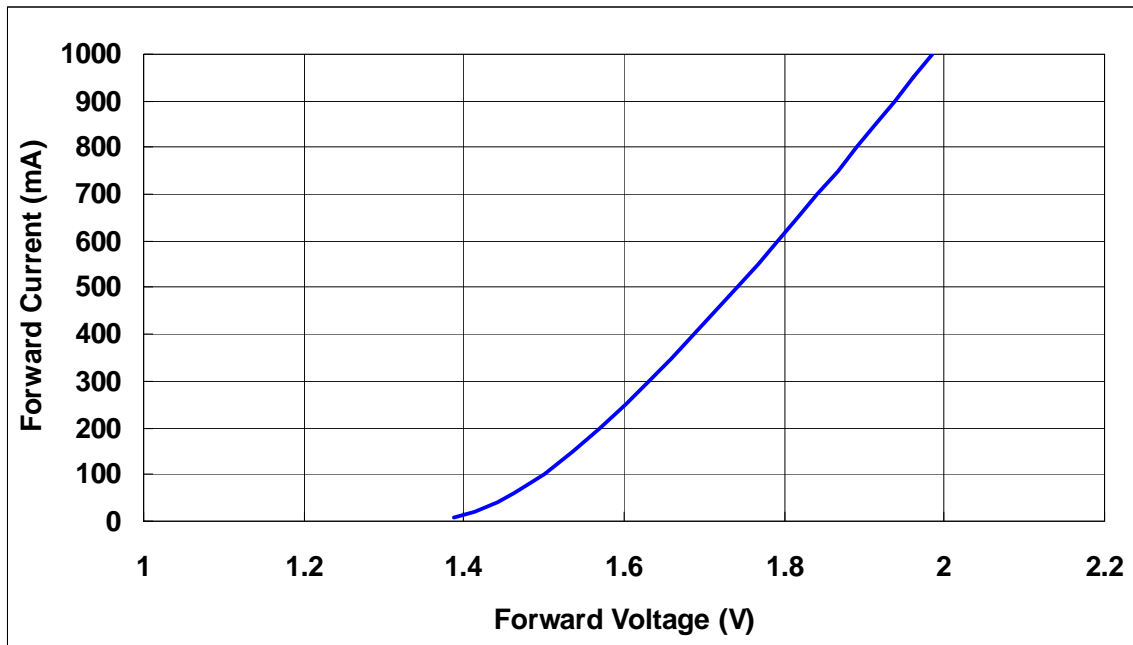


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CHARACTERISTIC DIAGRAM

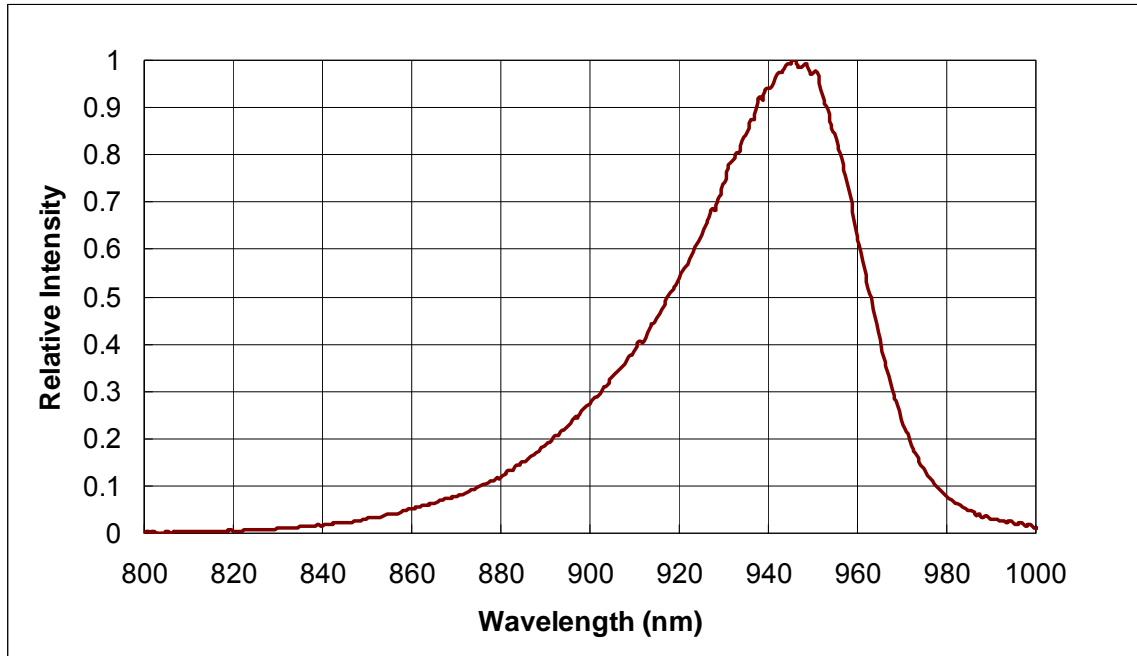




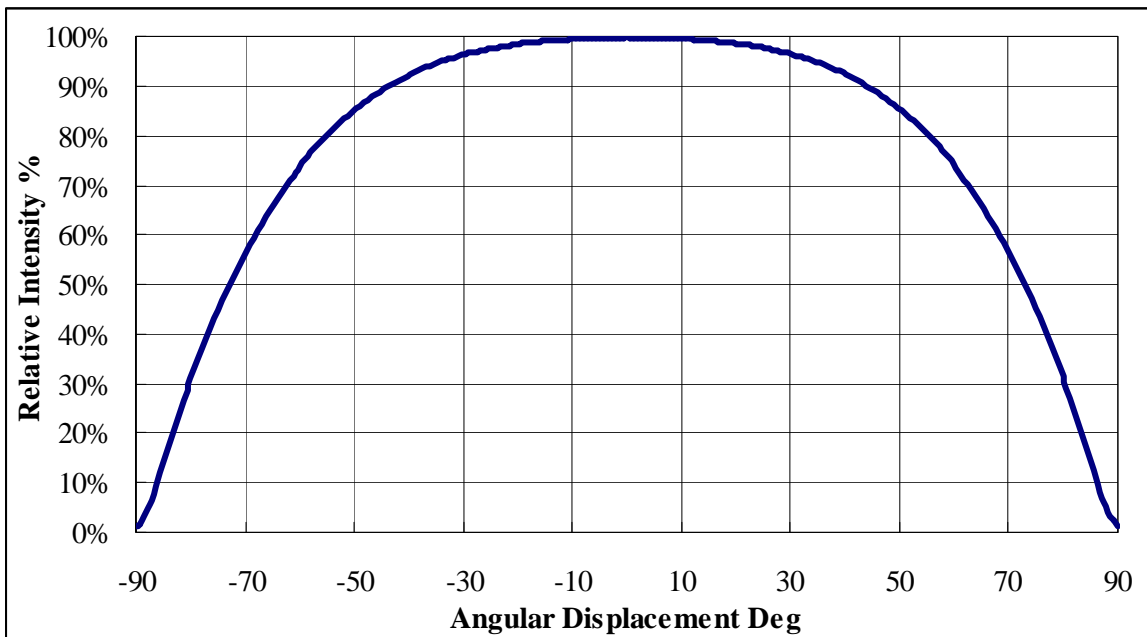
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TYPICAL RADIATION PATTERN



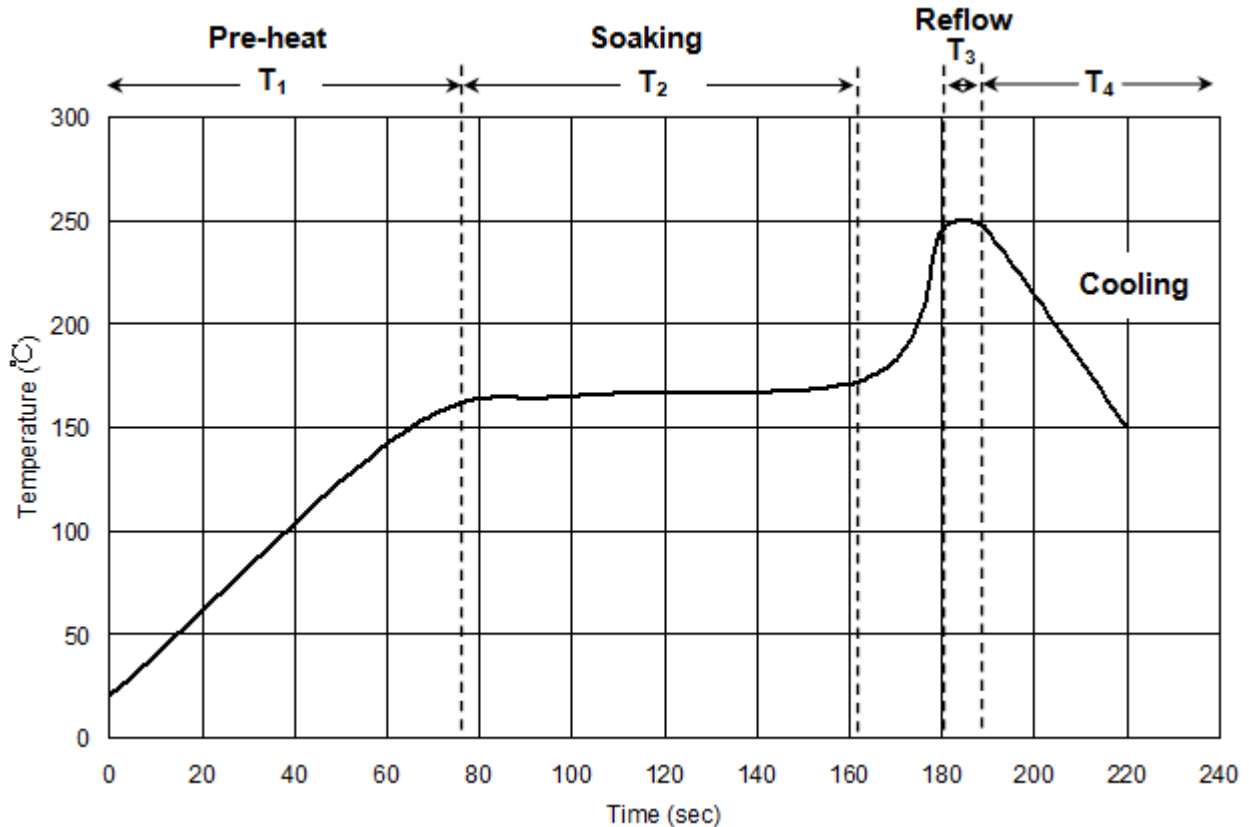


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REFLOW SOLDERING CHARACTERISTICS



T1	Ramp up rate	1.0~3.0 °C/sec
	Pre-heat time	50~80 sec
T2	Soaking temperature	155~185 °C
	Dwell time during soaking	60~120 sec
T3	Reflow temperature	240~250 °C
	Reflow time	Max 10 sec
T4	Ramp up rate during reflow	1.2~2.3 °C/sec
	Cooling	1.0~6.0 °C.sec

Note: suggest using Sn96Ag3Cu0.5 lead free solder

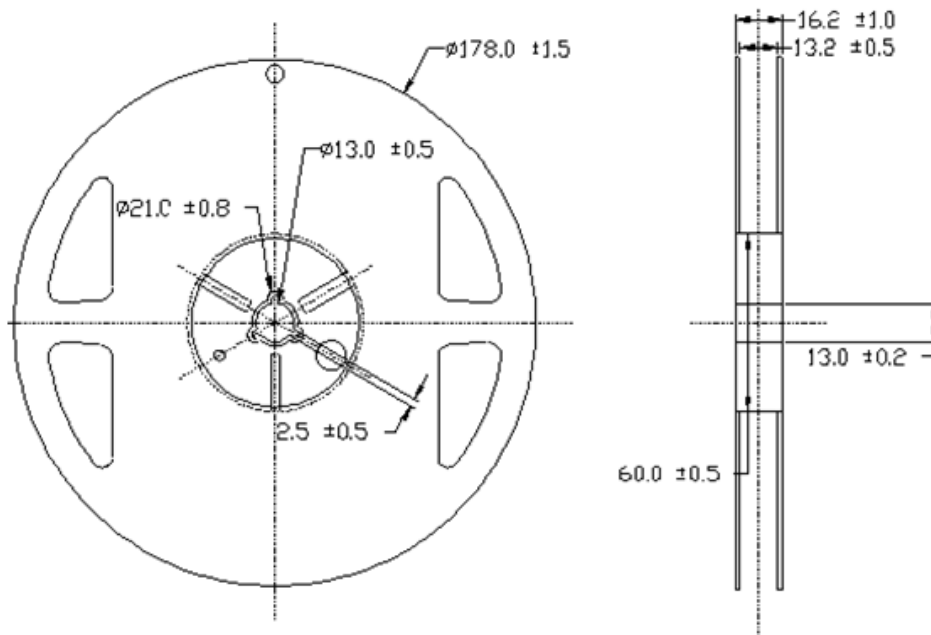
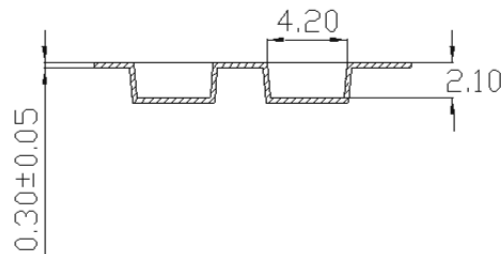
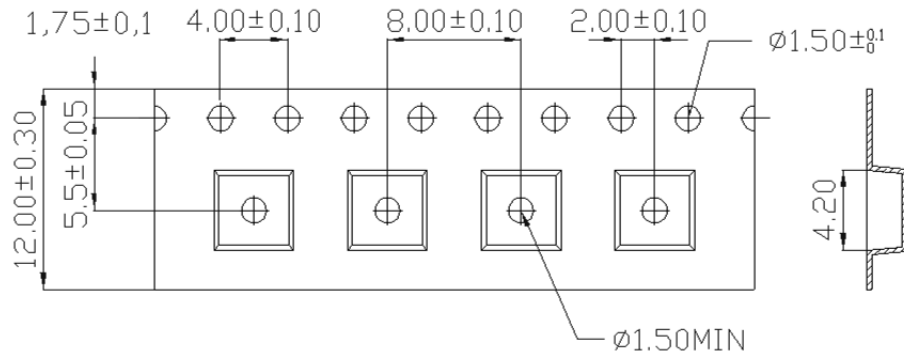


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SHIPPING PACKAGE DIMENSIONS



Notes:

1. Unit (mm)
2. Ship in moisture proof bag



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3. 1 Reel/Bag
4. 1000 (max)/Reel

RELIABILITY TEST

Classification	Test Item	Test conditions	Reference Standard
Endurance Test	Operation Life	$I_F = 1000\text{mA}$ $T_a = 25^\circ\text{C}$ Test Duration = 1000hrs	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
	High Temperature High Humidity Storage	$I_F = 1000\text{mA}$ $T_a = 85 \pm 5^\circ\text{C}$ RH = 85 \pm 5% Test Duration = 1000hrs	MIL-STD-202: 103B JIS C 7021: B-11
	High Temperature Storage	$T_a = 105 \pm 5^\circ\text{C}$ Test Duration = 1000hrs	MIL-STD-202: 1008 JIS C 7021: B10
	Low Temperature Storage	$T_a = -40 \pm 5^\circ\text{C}$ Test Duration = 1000hrs	JIS C 7021: B-12
Environmental Test	Temperature Cycling	$-30^\circ\text{C} \sim 25^\circ\text{C} \sim 105^\circ\text{C} \sim 25^\circ\text{C}$ 30min 5min 30min 5min Test Duration = 10 cycle	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1010 JIS C 7021: A-4
	Thermal Shock	$-30 \pm 5^\circ\text{C} \sim 105 \pm 5^\circ\text{C}$ 30min 30min Test Duration = 10 cycle	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
	Solder Resistance	$T_{\text{sol}} = 260 \pm 5^\circ\text{C}$ Dwell Time = 10sec	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1

Measuring Items	Symbol	Measuring Conditions	Failure Criteria
Forward voltage	V_F	$I_F = 1000\text{mA}$	V_F shift > 10%
Luminous	$I_v\%$	$I_F = 1000\text{mA}$	$I_v\%$ shift > 10%