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NPN SILICON PHOTOTRANSISTOR LED LAMPS



Lead-Free Parts

LPT11243-PF

# DATA SHEET

DOC. NO : QW0905-LPT11243-PF

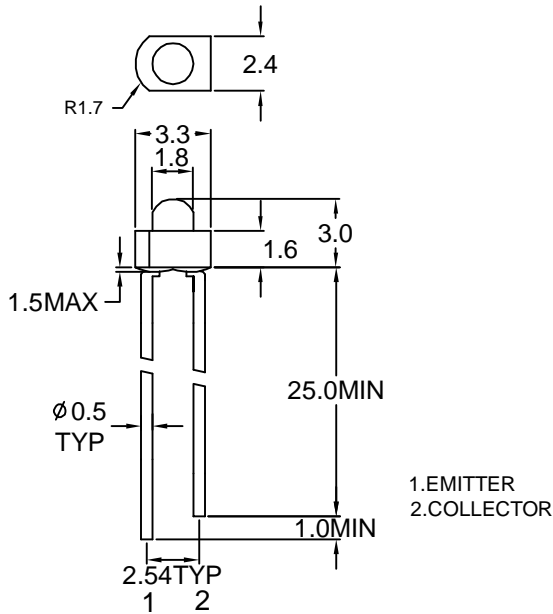
REV. : A

DATE : 29 - Oct. - 2009





Package Dimension



Features

- . High illumination sensitivity
- . Stable characteristics
- . Spectrally and mechanically matched with IR emitter

Description

The LPT11243 series are silicon nitride passivated NPN planar phototransistors with exceptionally stable characteristics and high illumination sensitivity the cases of LPT11243 are encapsulated in water clear plastic T1 3/4 package individualt

Note:1.All dimension are in millimeter tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted  
2.Specifications are subject to change without notice

• MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

PARAMETER	MAXIMUM RATINGS	UNIT
Power Dissipation	100	mw
Collector-Emitter Voltage	30	V
Emitter-Collector Voltage	5	V
Operating Temperature	-50°C TO +100°C	
Storage Temperature	-50°C TO +100°C	
Lead Soldering Temperature(1.6mm From Body)	260°C for 3 seconds	

• ELECTRICAL CHARACTERISTICS( $T_a=25^\circ\text{C}$ )

PARAMETER	SYMBOL	Min.	Typ.	Max.	UNIT	TEST CONDITION
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30			V	$I_c=1\text{mA}$ $E_e=0\text{mw}/\text{cm}^2$
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5			V	$I_E=100\ \mu\text{A}$ $E_e=0\text{mw}/\text{cm}^2$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.4	V	$I_c=0.5\text{mA}$ $E_e=20\text{mw}/\text{cm}^2$
Rise Time	$T_r$		5		$\mu\text{s}$	$V_{CE}=30\text{V}$ $I_C=800\ \mu\text{A}$ , $R_L=1\text{K}\Omega$
Fall Time	$T_f$		5		$\mu\text{s}$	
Collector Dark Current	$I_{CEO}$			100	nA	$V_{CE}=10\text{V}$ $E_e=0\text{mw}/\text{cm}^2$
On State Collector Current	$I_{p(on)}$	1		2	mA	$V_{CE}=5\text{v}$ $E_e=1\text{mw}/\text{cm}^2$ $\lambda P=940\text{nm}$
		2		4	mA	
		4		8	mA	
		8			mA	



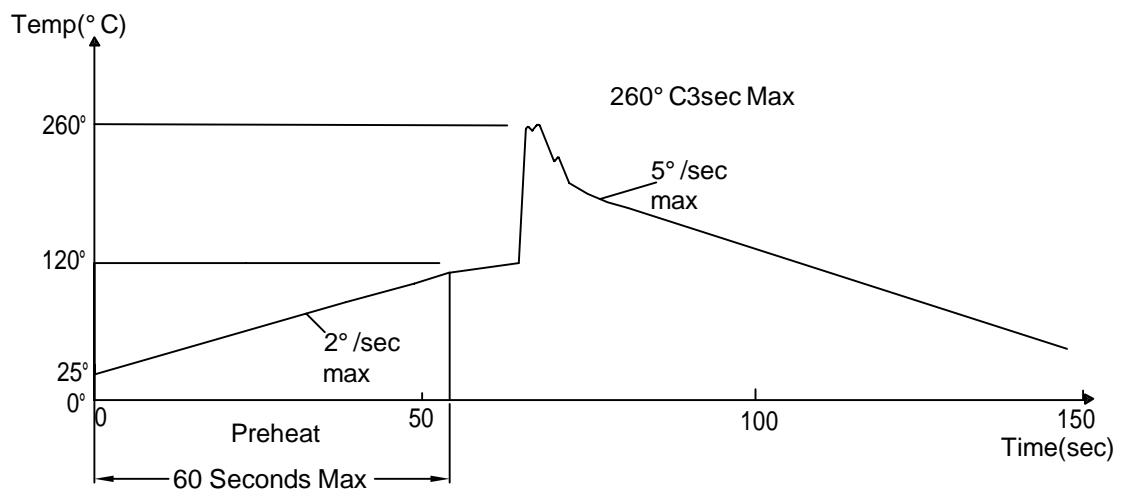
### Soldering Condition(Pb-Free)

#### 1.Iron:

- Soldering Iron:30W Max
- Temperature 350° C Max
- Soldering Time:3 Seconds Max(One time only)
- Distance:2mm Min(From solder joint to body)

#### 2.Wave Soldering Profile

- Dip Soldering
- Preheat: 120° C Max
- Preheat time: 60seconds Max
- Ramp-up
- 2° C/sec(max)
- Ramp-Down:-5° C/sec(max)
- Solder Bath:260° C Max
- Dipping Time:3 seconds Max
- Distance:2mm Min(From solder joint to body)



- Note: 1.Wave solder should not be made more than one time.  
2.You can just only select one of the soldering conditions as above.

**Reliability Test:**

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	This test is conducted for the purpose of determining the resistance of a part in electrical and thermal stressed.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=85 °C ±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40 °C ±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65 °C ±5°C 2.RH=90%~95% 3.t=240hrs ±2hrs	The purpose of this test is the resistance of the device under tropical for hours.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105 °C ±5°C & -40°C ±5°C (10min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
Solder Resistance Test	1.T.Sol=260 °C ±5°C 2.Dwell time= 10 ±1sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=230 °C ±5°C 2.Dwell time=5 ±1sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2