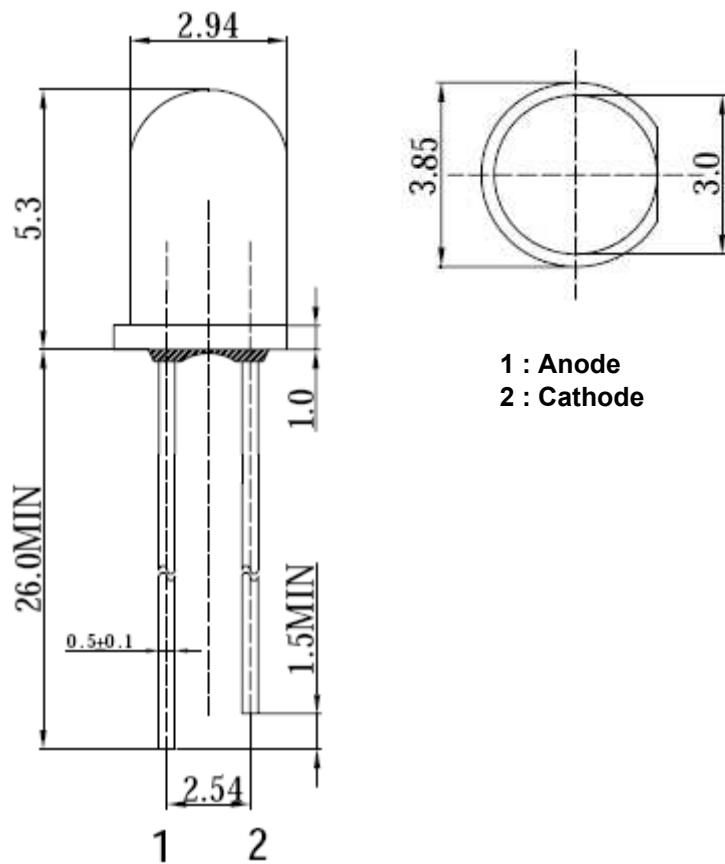




**Applications**

- Electronic Signs and Signals
- Small Area Illuminations
- Back Lighting
- Other Lighting

**Technical Drawing**



1 : Anode  
 2 : Cathode

**Notes :**

All dimensions in mm tolerance is  $\pm 0.1$ mm unless otherwise noted.

<b>Round LED Red</b>	
Part No.:	<b>M13A2010</b>
Customer:	

DRW:	Dong	CHKD	Chang	MATL:	Chui	DATE	30.06.2010
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**Absolute Maximum Ratings**

Item	Symbol	GaAsP	Unit
Power Dissipation	$P_D$	---	mW
DC Forward Current	$I_F$	20	mA
Pulsed Forward Current	$I_{FP}^*$	---	mA
Reverse Voltage	$V_R$	---	V
Operating Temperature	$T_{OP}$	---	°C
Storage Temperature	$T_{ST}$	---	°C

\* 0.1 msec pulse, 10% duty cycle

**Electrical / Optical Characteristics**

Ermitting Color	Red		
Material	GaAsP		
Forward Voltage	typ.	1.8	$V_F$
	max.	2.3	$V_F$
Wavelength typ.	$\lambda_D$	630	nm
	$\lambda_P$	640	nm
	$\Delta\lambda$	---	nm
Color Temperature	min.	---	K
	max.	---	K
Luminous Intensity *	min.	200	mcd
	typ.	350	mcd
Reverse Current	max.	---	$\mu A$
Viewing Angle	$2\theta_{1/2}$	25	

\* Per NIST standards

**Round LED**  
**Red**

Part No.: **M13A2010**

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### Directive Characteristics

**Round LED  
Red**

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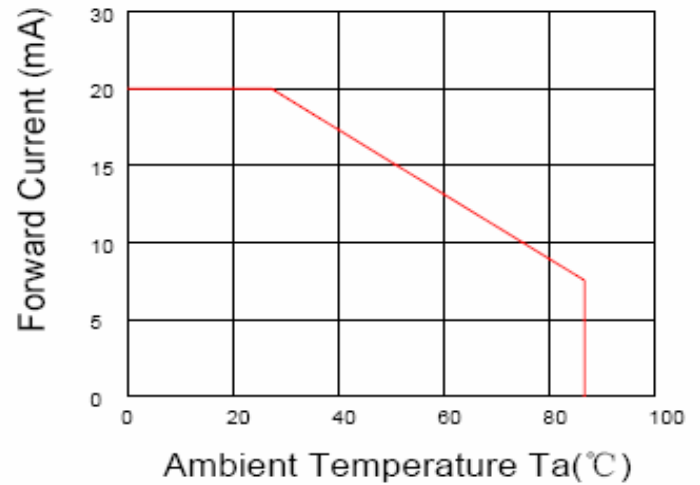


**Curve**

Relative Intensity VS. Ambient Temp



Forward Current VS. Ambient Temp



Forward Current VS. Relative Intensity



**Round LED**  
**Red**

Part No.: **M13A2010**

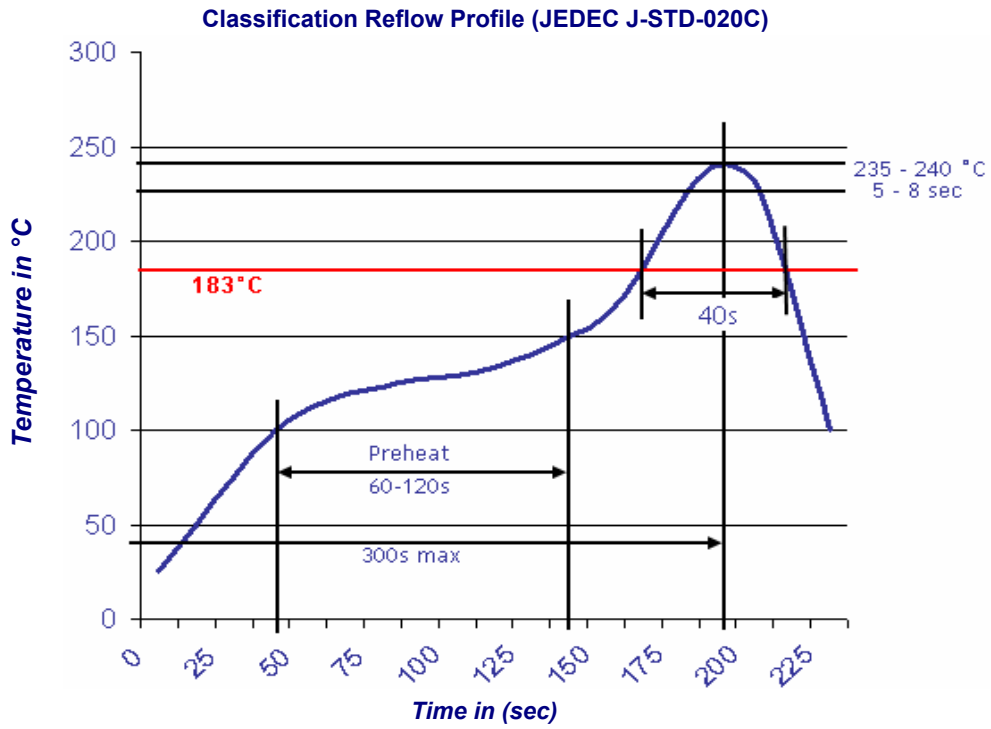
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**Solder Condition**

**Lead Free Solder**



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**Color table curve**



<b>Round LED Red</b>	
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