

**Inolux Technologies 0.5" Dual Digit Numeric Display  
HNTD50 Series**

Official Product	HNTD50 Series	Customer Part No.		Data Sheet No.
	*****	*****		HNTD50 Series
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## DISCLAIMER

- The information contained herein is presented only as a guide for the applications of our products.

No responsibility is assumed by INOLUX for any infringements of intellectual property or other rights of the third parties which may result from its use.

- Inolux is continually effort to improve the quality of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing INOLUX products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such INOLUX products cause loss of human life, bodily injury or damage to property.
- The INOLUX products listed in this document are intended for usage in general electronics (computer, personal equipment, office equipment, industrial robotics, domestic, etc...) These products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury.
- In developing your designs, please ensure that INOLUX products are used within specified operating ranges as set forth in the most recent INOLUX products specifications.
- Also, please keep in mind the precautions listed in this document.

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**Orderable Information**

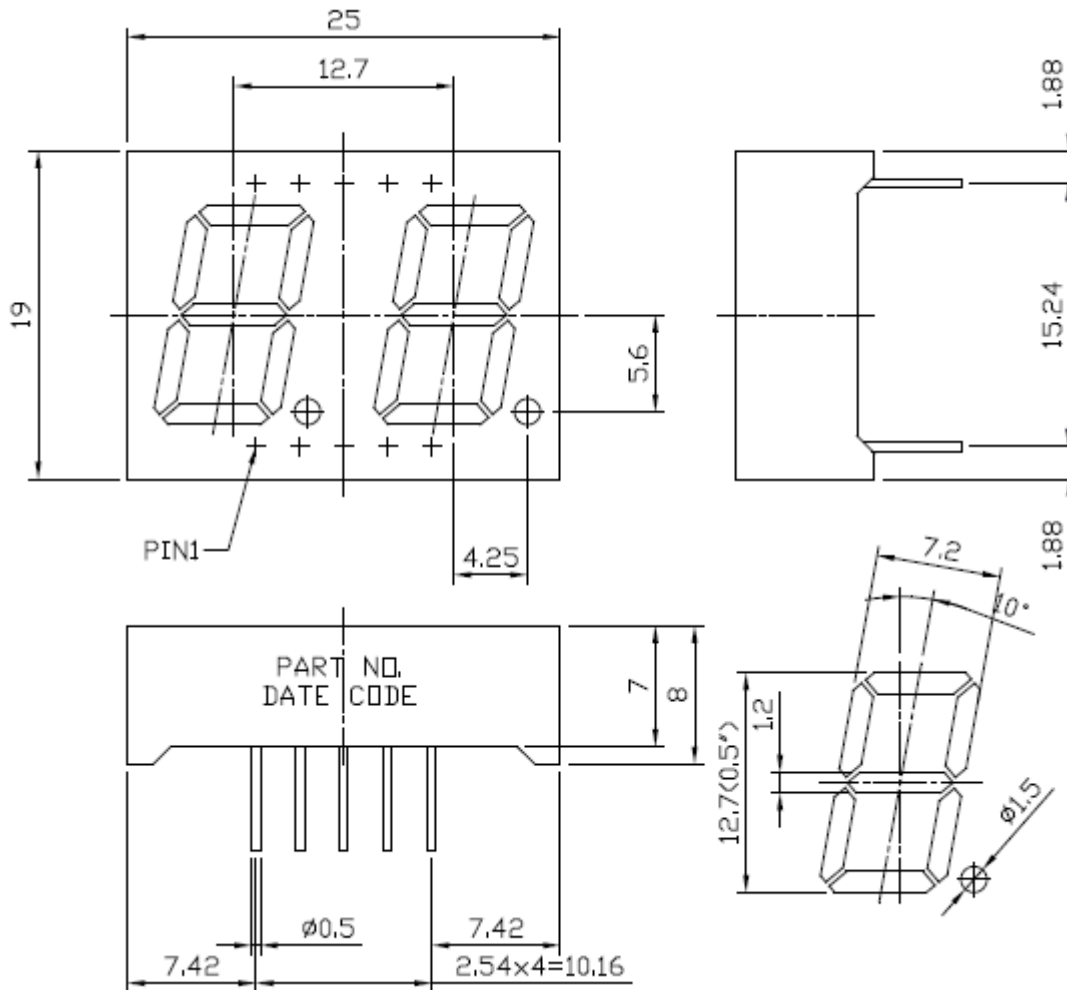
**H N T D 50 X X X - X X X X**

Series Name	Digit Height	Color Code	Polarity	Customer Code
<b>HNTD</b> H: Inolux Technologies N: Numeric T: Through Hole D: Dual digit	<b>50:</b> 0.5" digit height	<b>UB:</b> 470nm InGaN Blue <b>UTG:</b> 525nm InGaN True Green <b>UYG:</b> 570nm AllnGaP Yellow Green <b>UY:</b> 590nm AllnGaP Yellow <b>UA:</b> 606nm AllnGaP Amber <b>UR:</b> 625nm AllnGaP Hyper Red <b>USR:</b> 639nm AllnGaP Super Red	<b>CA:</b> Common Anode  <b>CC:</b> Common Cathode	<b>XXXX:</b> Customer specific code

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## Features

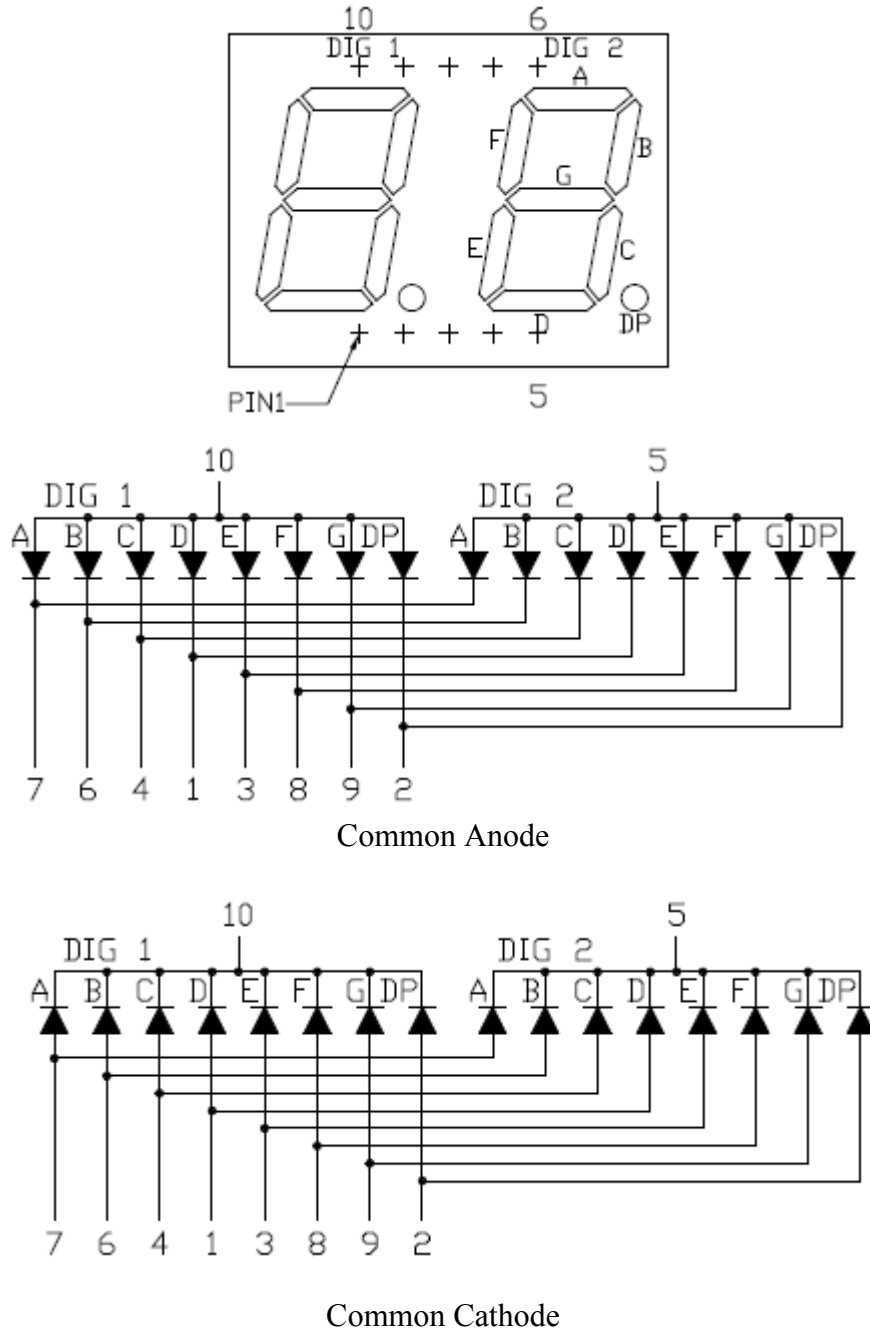
- 0.5" (12.7mm) Digit Height
- Through Hole Display
- Black Face , White Segment
- RoHS Compliant, Pb Free



**Note:** Dimension is in millimeters. Tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted.

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### Schematic Drawing



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## Product Characteristic

### Absolute Maximum Rating

(T<sub>a</sub> = 25°C)

Product	Emission Color	P <sub>AD</sub> (mW)	I <sub>AF</sub> (mA)	I <sub>PF</sub> (mA)	V <sub>R</sub> (V)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)	Derate From 25°C (mA/°C)
HNTD50UBCA/ HNTD50UBCC	Blue	120	30	100	5	-25 ~ +85	-25 ~ +85	0.4
HNTD50UTGA/ HNTD50UTGC	True Green	120	30	100	5	-25 ~ +85	-25 ~ +85	0.3
HNTD50UYGA/ HNTD50UYGC	Yellow Green	85	30	120	5	-25 ~ +85	-25 ~ +85	0.42
HNTD50UYA/ HNTD50UYC	Yellow	70	25	90	5	-25 ~ +85	-25 ~ +85	0.28
HNTD50UAA/ HNTD50UAC	Amber	70	25	90	5	-25 ~ +85	+25 ~ +85	0.33
HNTD50URA/ HNTD50URC	Hyper Red	70	25	90	5	-25 ~ +85	-25 ~ +85	0.33
HNTD50USRA/ HNTD50USRC	Super Red	70	25	90	5	-25 ~ +85	-25 ~ +85	0.33

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**Electrical and Optical Characteristic**

 (T<sub>a</sub> = 25°C )

Product	Emission Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		λ (nm)		I <sub>V</sub> (mcd)	I <sub>R</sub> (μA)
			Typ.	Max.	λ <sub>d</sub>	Δλ	Typ.	Max
HNTD50UBCA/ HNTD50UBCC	Blue	20	3.2	4.0	470	30	80	10 (V <sub>R</sub> =8V)
HNTD50UTGA/ HNTD50UTGC	True Green	20	3.2	4.0	525	30	160	10 (V <sub>R</sub> =8V)
HNTD50UYGA/ HNTD50UYGC	Yellow Green	20	2.1	2.6	571	20	25	10 (V <sub>R</sub> =5V)
HNTD50UYA/ HNTD50UYC	Yellow	20	2.0	2.6	590	20	60	10 (V <sub>R</sub> =5V)
HNTD50UAA/ HNTD50UAC	Amber	20	2.0	2.6	606	35	60	10 (V <sub>R</sub> =5V)
HNTD50URA/ HNTD50URC	Hyper Red	20	2.0	2.6	625	20	60	10 (V <sub>R</sub> =5V)
HNTD50USRA/ HNTD50USRC	Super Red	20	2.0	2.6	639	20	35	10 (V <sub>R</sub> =5V)

Luminous Intensity tolerance = +/- 15%

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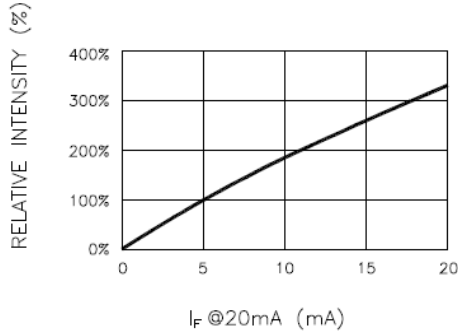
**Characteristic Curves for UB**


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

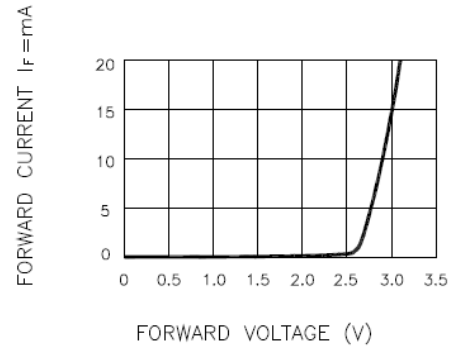


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

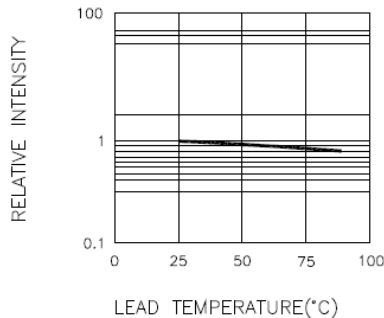
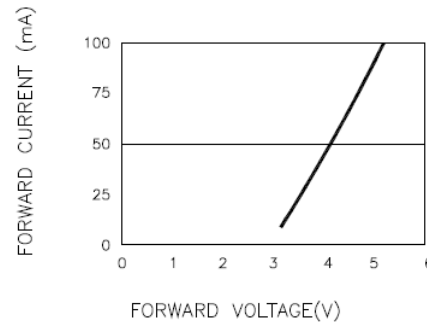
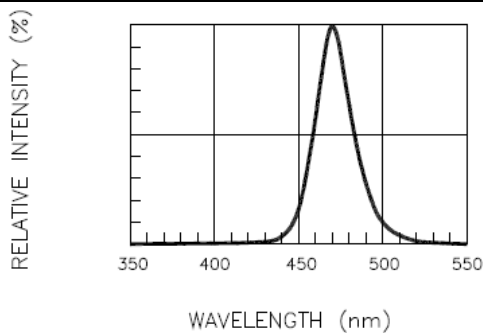
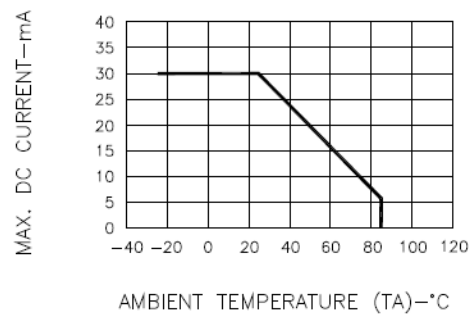
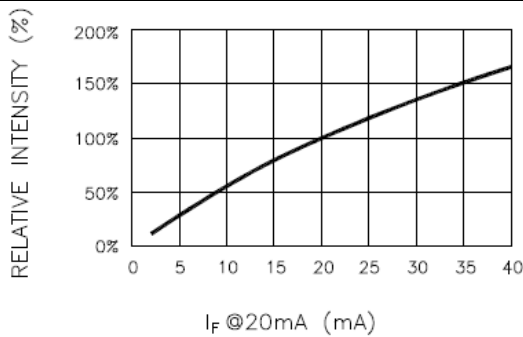
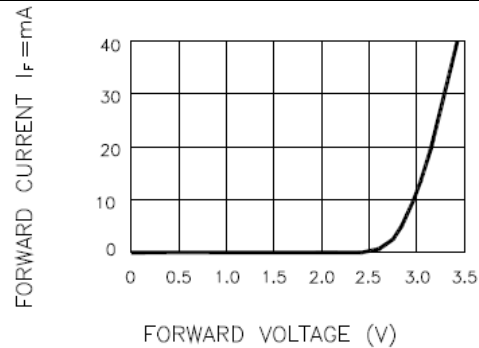
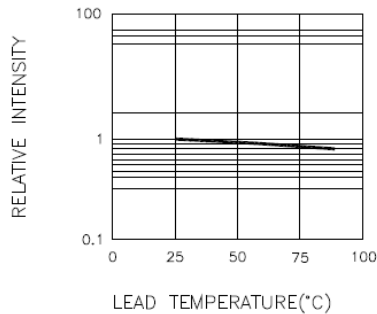
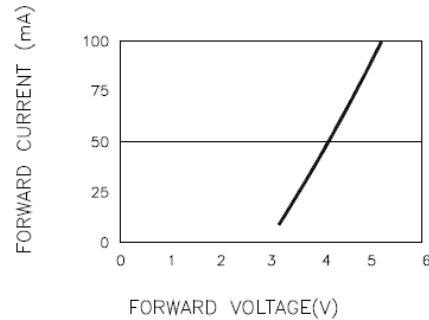
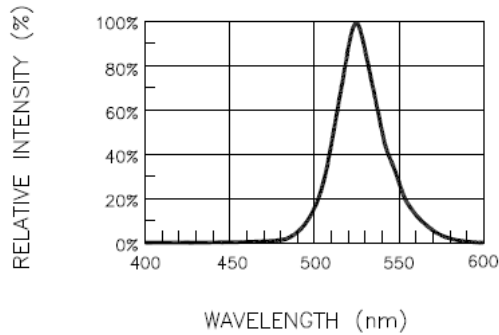
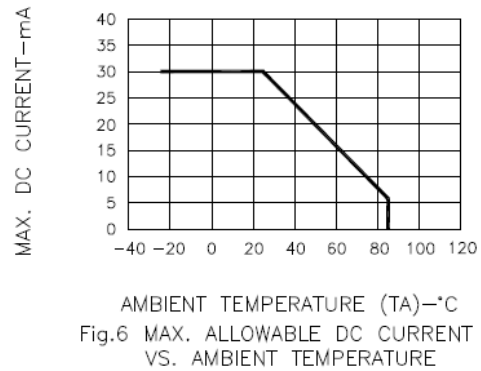

 Fig.3 RELATIVE INTENSITY VS. LEAD TEMPERATURE  
(PULSED 20 mA; 300us PULSE, 10ms PERIOD)

 Fig.4 PEAK FORWARD VOLTAGE VS. FORWARD  
(100us TEST PULSE, 1% DUTY CYCLE)


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH


 Fig.6 MAX. ALLOWABLE DC CURRENT  
VS. AMBIENT TEMPERATURE

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**Characteristic Curves for UTG**

**Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT**

**Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE**

**Fig.3 RELATIVE INTENSITY VS. LEAD TEMPERATURE  
(PULSED 20 mA; 300us PULSE, 10ms PERIOD)**

**Fig.4 PEAK FORWARD VOLTAGE VS. FORWARD CURRENT  
(100us TEST PULSE, 1% DUTY CYCLE)**

**Fig.5 RELATIVE INTENSITY VS. WAVELENGTH**

**Fig.6 MAX. ALLOWABLE DC CURRENT  
VS. AMBIENT TEMPERATURE**

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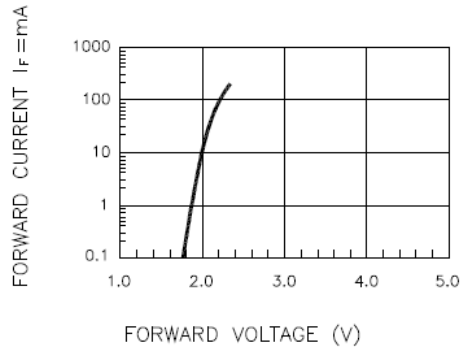
**Characteristic Curves for UYG**


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

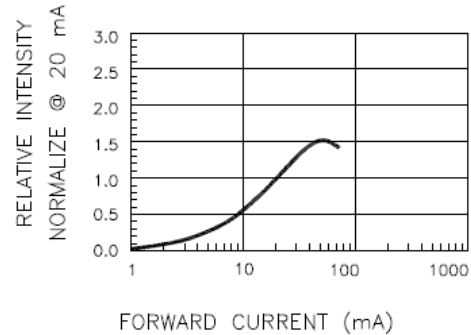


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

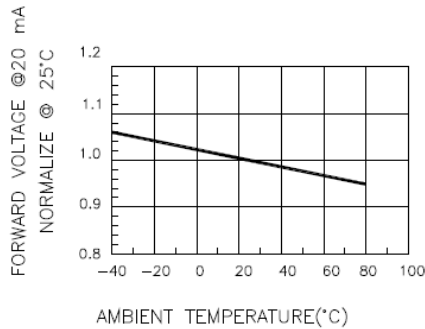


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

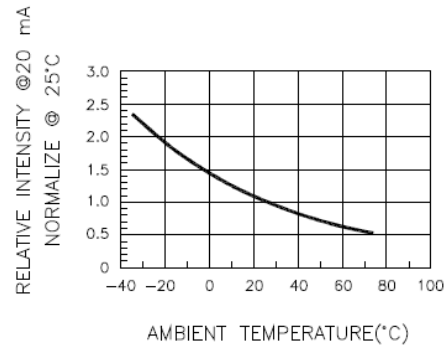


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

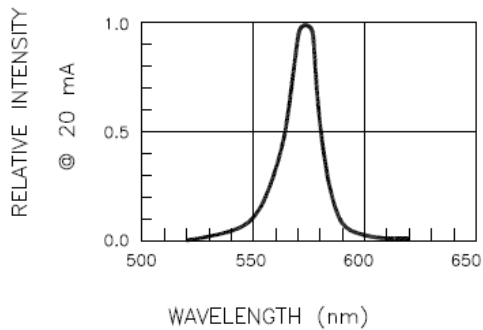


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

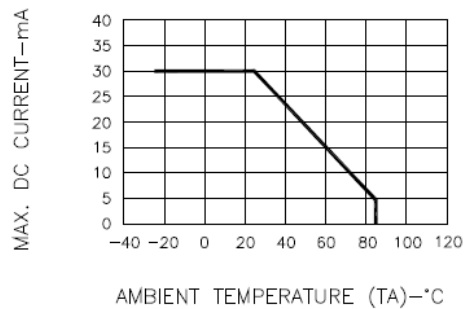


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

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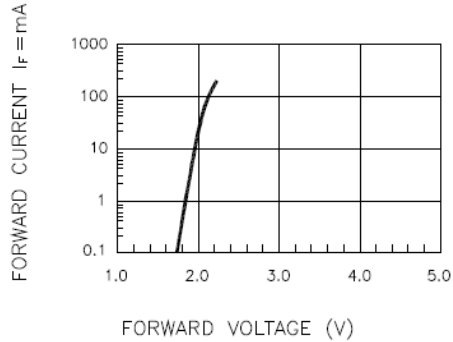
**Characteristic Curves for UY**


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

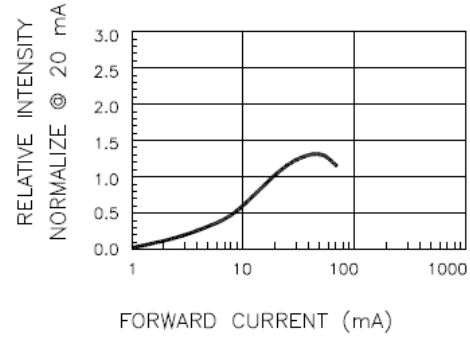


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

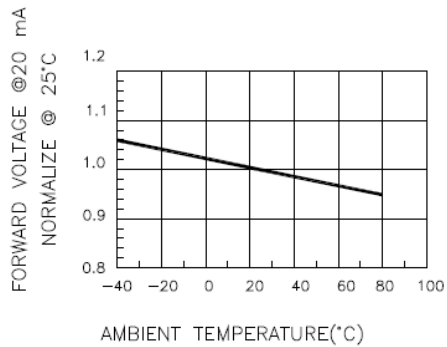


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

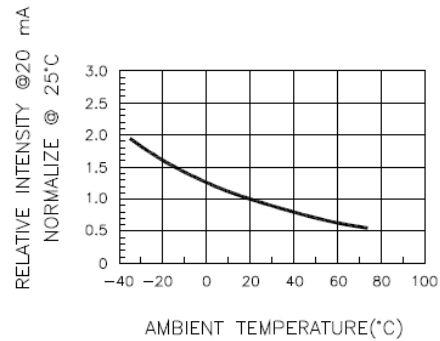


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

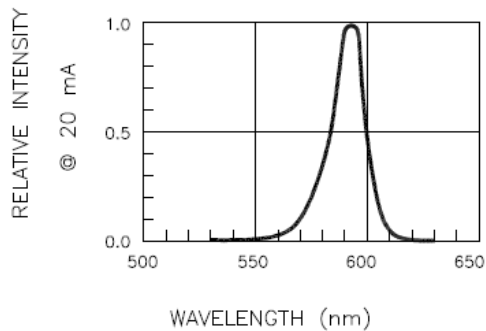


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

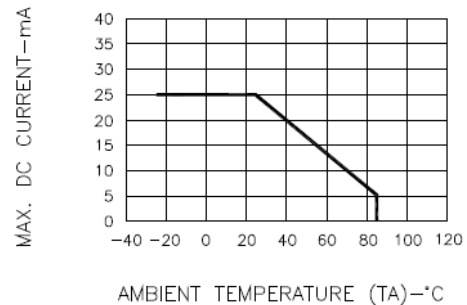


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

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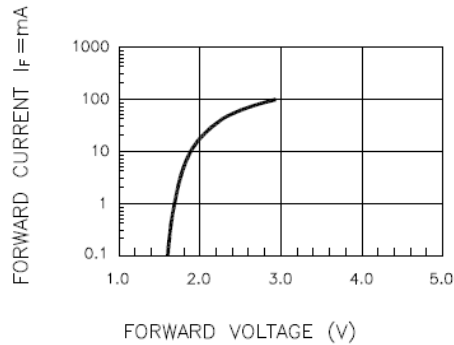
**Characteristic Curves for UA**


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

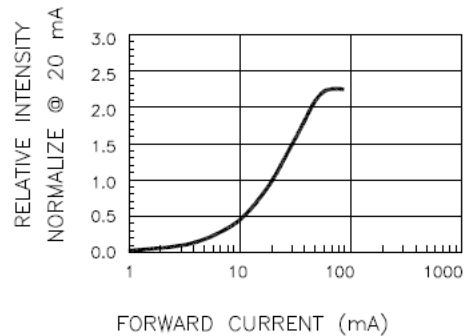


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

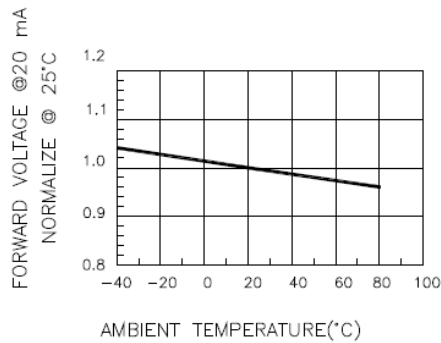


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

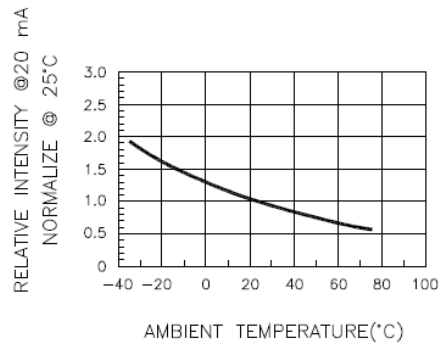


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

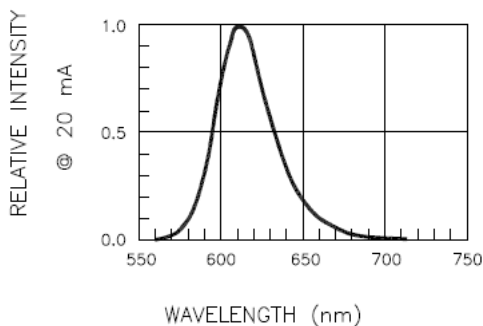


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

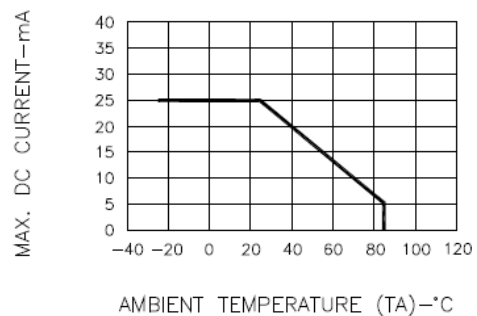


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

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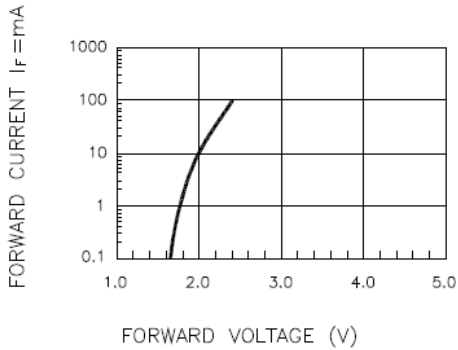
**Characteristic Curves for UR**


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

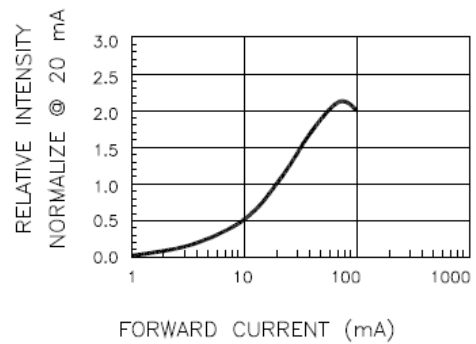


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

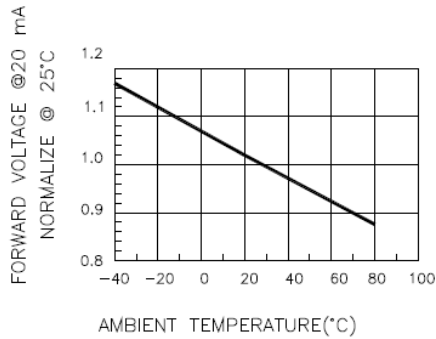


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

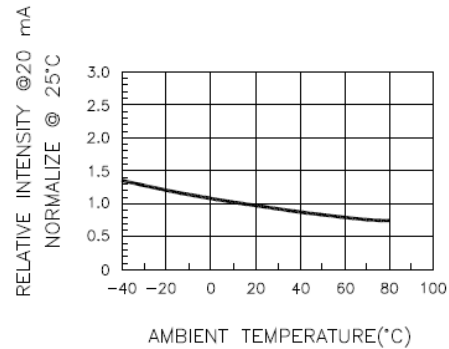


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

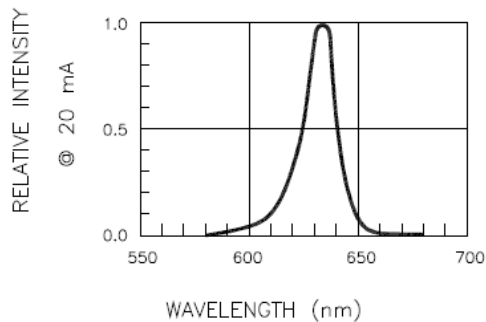


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

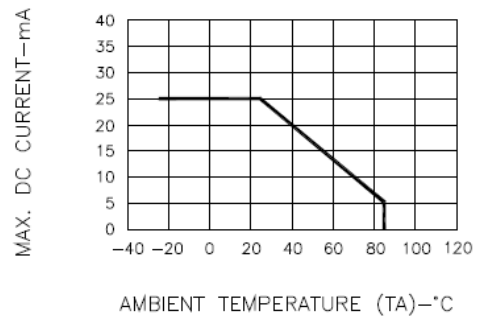


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

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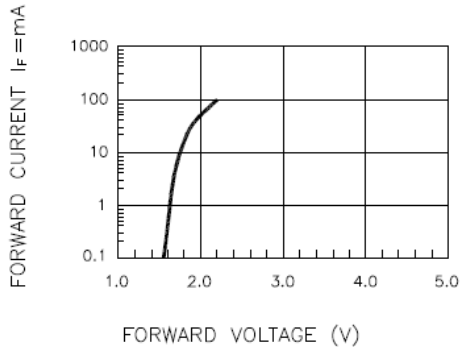
**Characteristic Curves for USR**


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

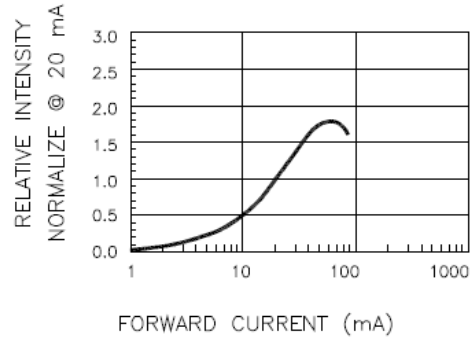


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

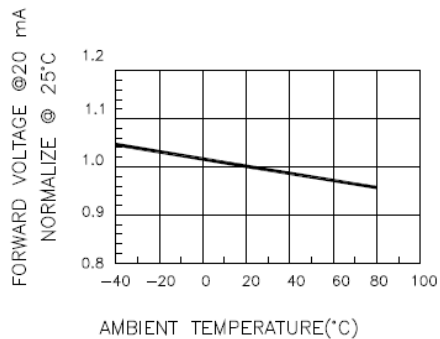


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

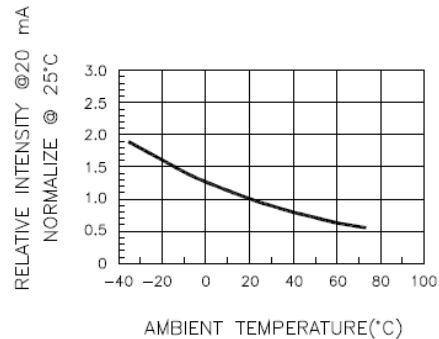


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

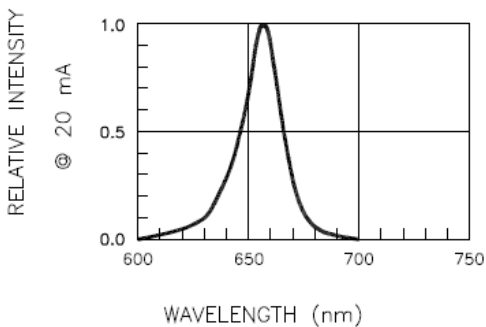


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

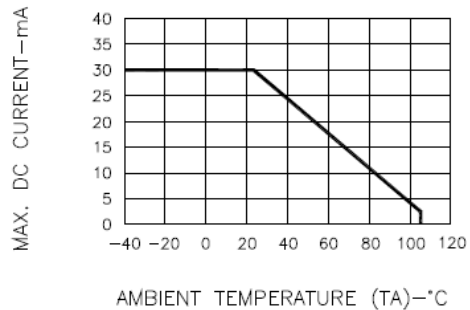
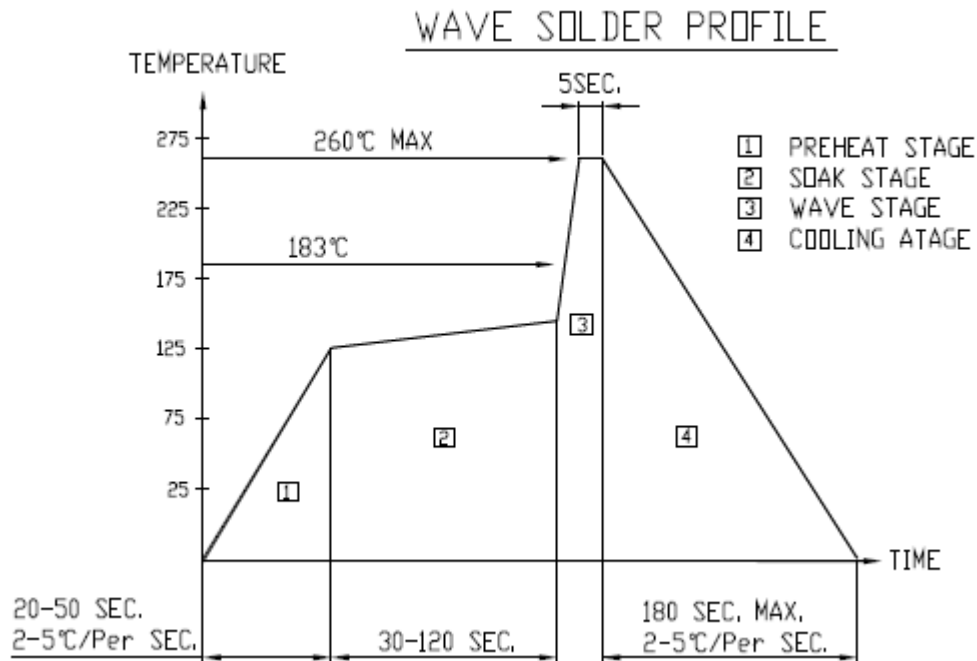


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

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## Reflow Soldering



## Soldering Iron

Basic Spec is  $\leq 4$  sec. when 260°C (+10°C  $\rightarrow$  -1 second). Power dissipation of Iron should be less than 15W. Surface temperature should be under 230°C

## Rework

Rework should be completed within 4 second under 245°C

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Changes since last revision	Page	Version No.	Revision Date
Initial Release for HNTD50		1.0	05-03-2013

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