Inolux Technologies 0.39” Four Digit Numeric SMD Display HNSQ39 Series

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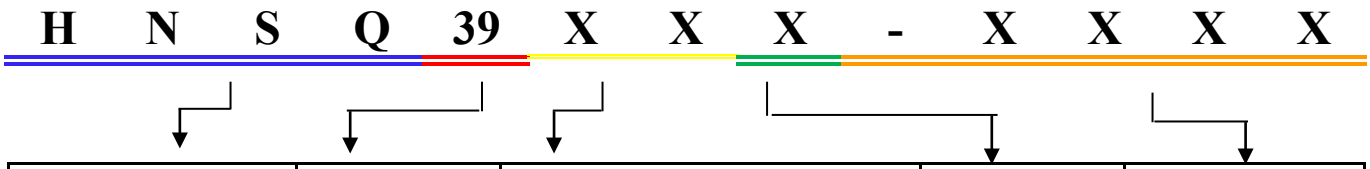
- In developing your designs, please ensure that INOLUX products are used within specified operating ranges as set forth in the most recent INOLUX products specifications.
- Also, please keep in mind the precautions listed in this document.

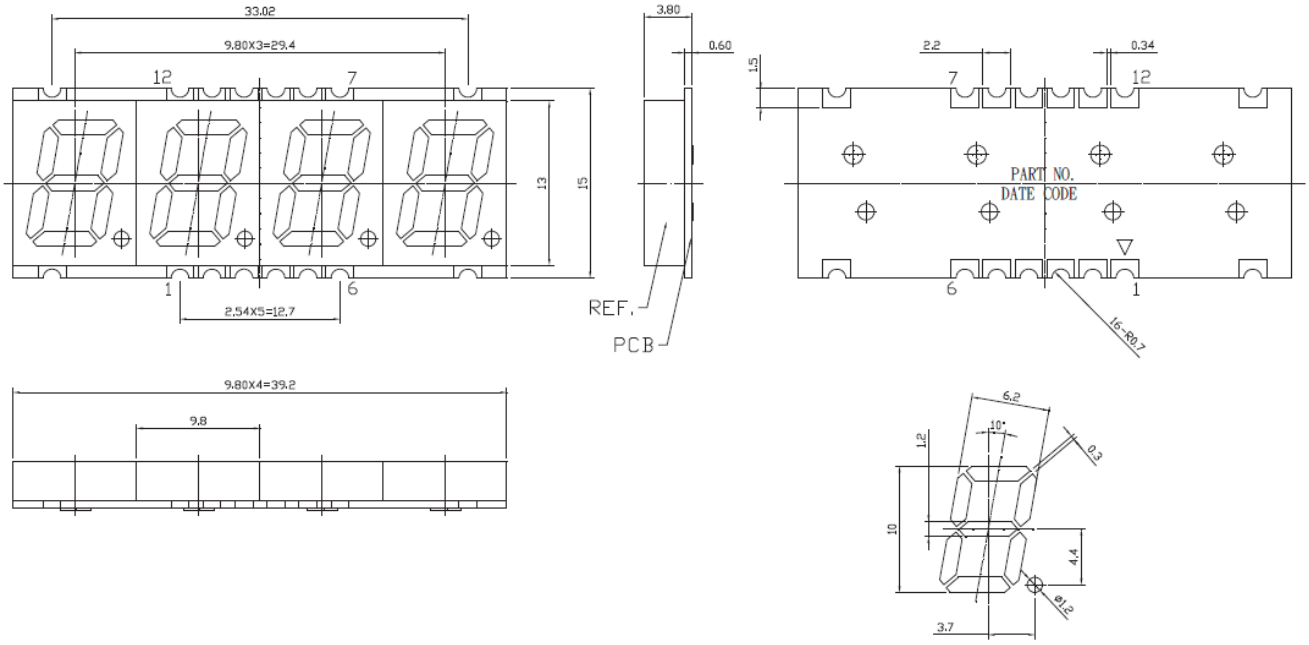
Orderable Information



Series Name	Digit Height	Color Code	Polarity	Customer Code
HNSD H: Inolux Technologies N: Numeric S: SMD Display Q: Four Digit	**39:** 0.39” Digit Height	**UB:** 470nm InGaN Blue **TG:** 525nm InGaN True Green **TW:** InGan White **UYG:** 570nm AllnGaP Yellow Green **UY:** 590nm AllnGaP Yellow **UA:** 610nm AllnGaP Amber **UR:** 625nm AllnGaP Hyper Red **USR:** 640nm AllnGaP Super Red	**A:** Common Anode **C:** Common Cathode	**XXXX:** Customer specific code

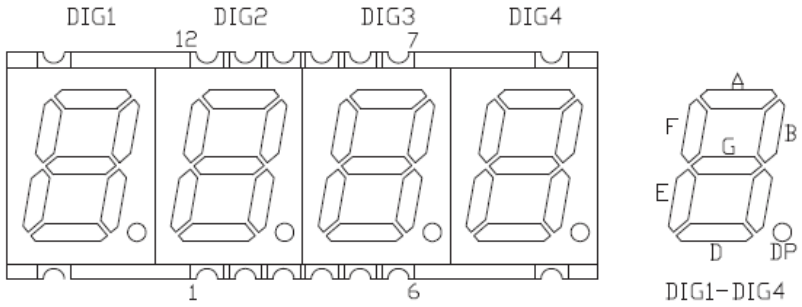
Features

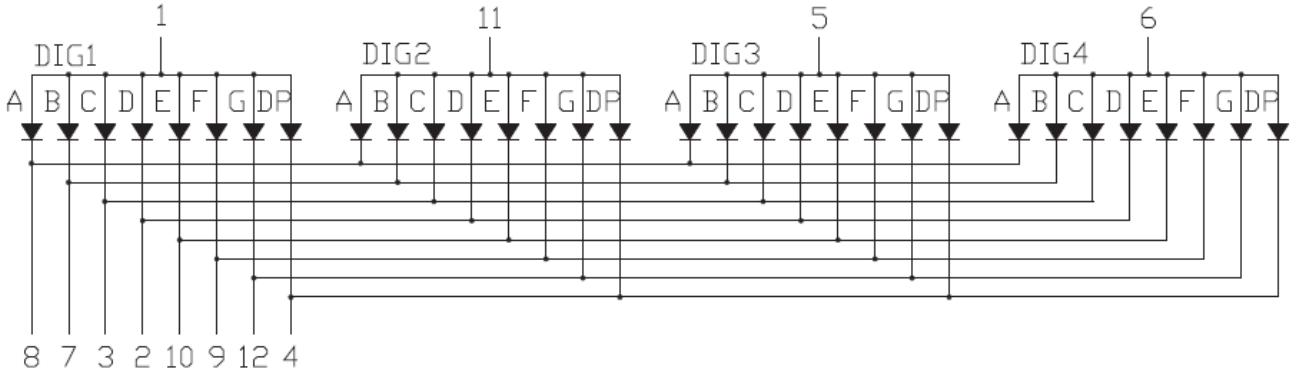
- 0.39” (10.0mm) Digit Height
- SMD Type Display
- Gray Face , White Segment
- RoHS Compliant, Pb Free



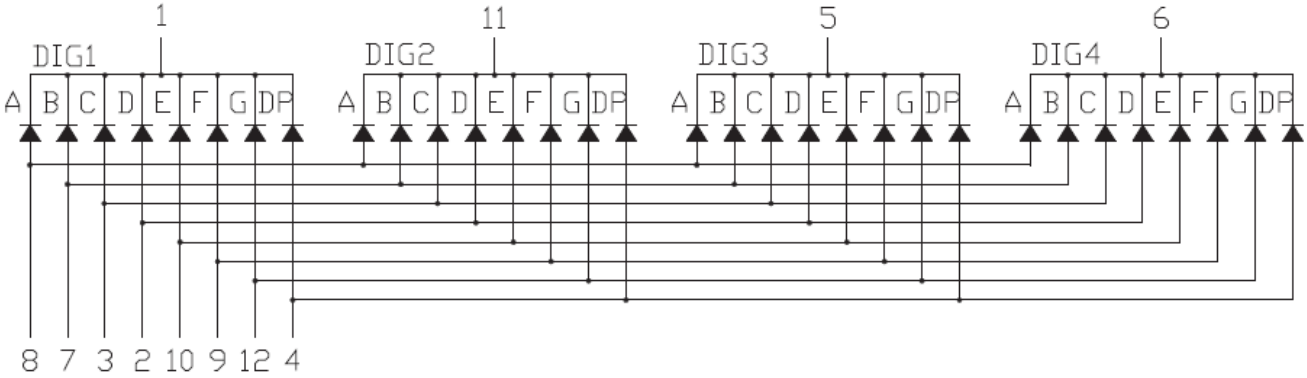
Note: Dimension is in millimeters. Tolerance is ±0.25mm unless otherwise noted.

Schematic Drawing





Common Anode



Common Cathode

Product Characteristic

Absolute Maximum Rating

(T_a= 25°C)

Product	Emission Color	P_{AD} (mW)	I_{AF} (mA)	I_{PF} (mA)	V_R (V)	T_{OP}(°C)	T_{ST}(°C)	Derate From 25°C (mA/°C)
HNSQ39UBA/ HNSQ39UBC	Blue	120	30	100	5	-40 ~ +105	-40 ~ +105	0.3
HNSQ39TGA/ HNSQ39TGC	True Green	120	30	100	5	-40 ~ +105	-40 ~ +105	0.3
HNSQ39TWA/ HNSQ39TWC	White	120	30	100	5	-40 ~ +105	-40 ~ +105	0.3
HNSQ39UYGA/ HNSQ39UYGC	Yellow Green	70	25	90	5	-40 ~ +105	-40 ~ +105	0.28
HNSQ39UYA/ HNSQ39UYC	Yellow	70	25	90	5	-40 ~ +105	-40 ~ +105	0.28
HNSQ39UAA/ HNSQ39UAC	Amber	70	25	90	5	-40 ~ +105	-40 ~ +105	0.28
HNSQ39URA/ HNSQ39URC	Hyper Red	70	25	90	5	-40 ~ +105	-40 ~ +105	0.28
HNSQ39USRA/ HNSQ39USRC	Super Red	75	30	100	5	-40 ~ +105	-40 ~ +105	0.3

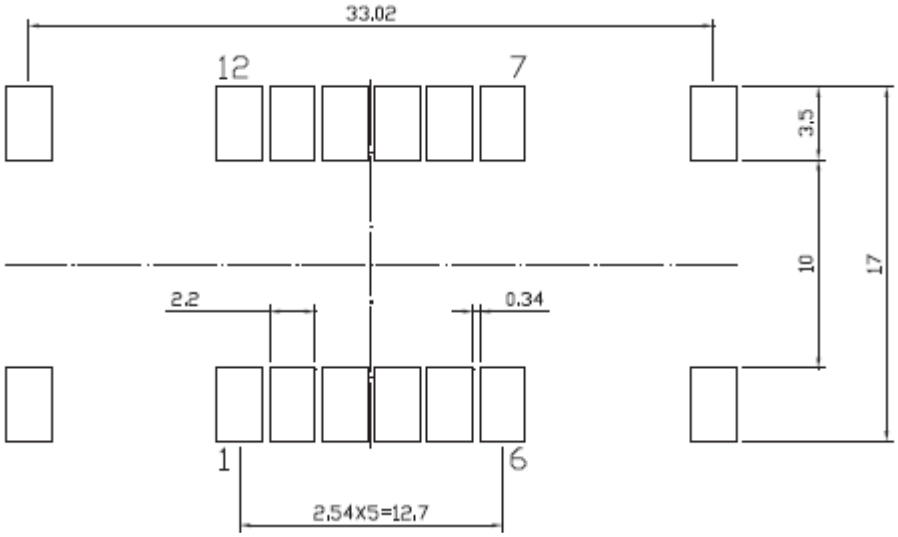
Electrical and Optical Characteristic

(T_a= 25°C)

Product	Emission Color	I_F (mA)	V_F (V)		λ (nm)		I_V (mcd)	I_R (μA)
			Typ.	Max.	λd	Δλ	Typ.	Max
HNSQ39UBA/ HNSQ39UBC	Blue	20	3.2	4.0	470	30	40	10 (V_R=8V)
HNSQ39TGA/ HNSQ39TGC	True Green	20	3.2	4.0	525	30	130	10 (V_R=8V)
HNSQ39TWA/ HNSQ39TWC	White	5	3.2	4.0	X=0.29 Y=0.29	30	25	10 (V_R=8V)
HNSQ39UYGA/ HNSQ39UYGC	Yellow Green	20	2.1	2.6	570	20	12	10 (V_R=5V)
HNSQ39UYA/ HNSQ39UYC	Yellow	20	2.0	2.6	590	20	30	10 (V_R=5V)
HNSQ39UAA/ HNSQ39UAC	Amber	20	2.0	2.6	610	20	30	10 (V_R=5V)
HNSQ39URA/ HNSQ39URC	Hyper Red	20	2.0	2.6	625	20	30	10 (V_R=5V)
HNSQ39USRA/ HNSQ39USRC	Super Red	20	2.0	2.6	640	20	4	10 (V_R=5V)

Luminous Intensity tolerance = +/- 15%

Recommended Solder Footprint



Characteristic Curves for UB

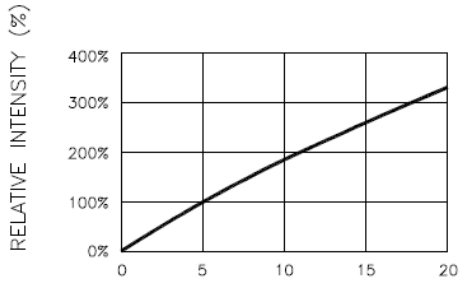


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

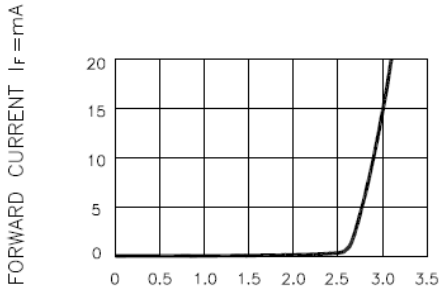


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

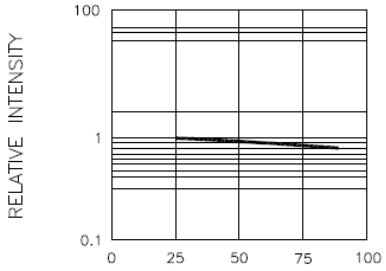


Fig.3 RELATIVE INTENSITY VS.LEAD TEMPERATURE
(PULSED 20 mA; 300us PULSE,10ms PERIOD)

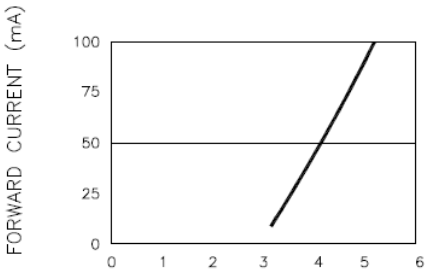


Fig.4 PEAK FORWARD VOLTAGE VS.FORWARD
(100us TEST PULSE, 1% DUTY CYCLE)

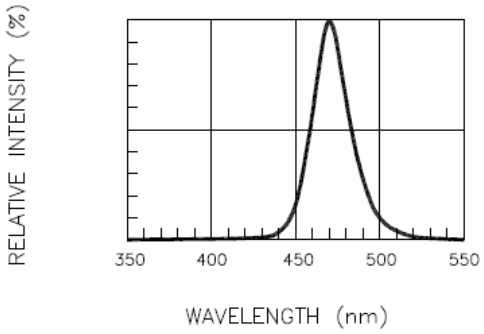


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

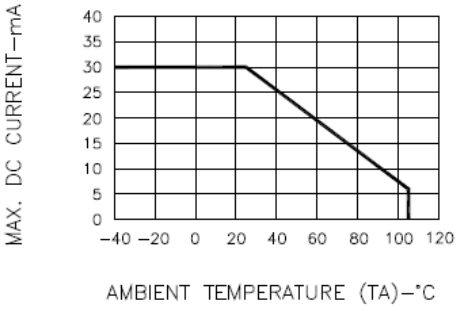


Fig.6 MAX. ALLOWABLE DC CURRENT
VS. AMBIENT TEMPERATURE

Characteristic Curves for TG

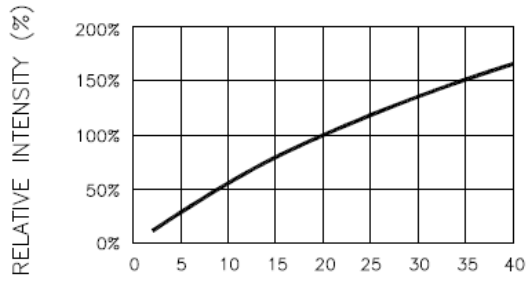


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

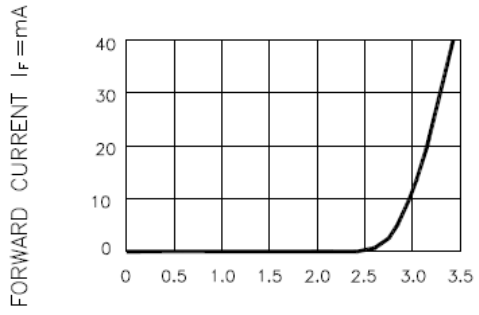


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

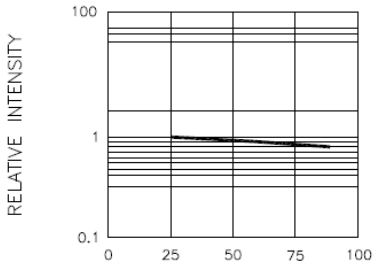


Fig.3 RELATIVE INTENSITY VS.LEAD TEMPERATURE
(PULSED 20 mA; 300us PULSE,10ms PERIOD)

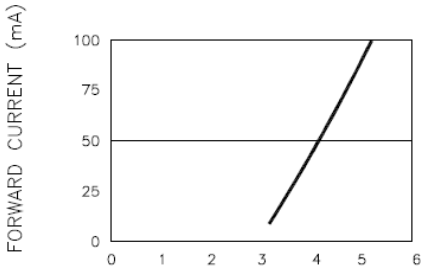


Fig.4 PEAK FORWARD VOLTAGE VS.FORWARD
(100us TEST PULSE, 1% DUTY CYCLE)

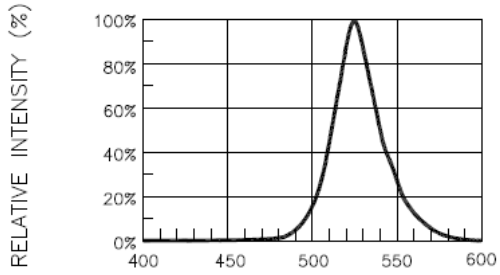


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

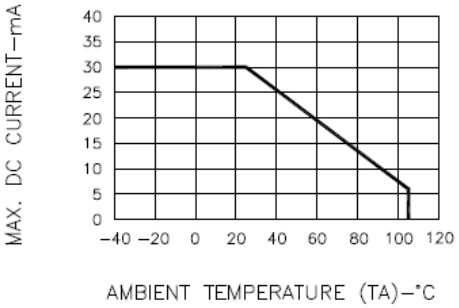


Fig.6 MAX. ALLOWABLE DC CURRENT
VS. AMBIENT TEMPERATURE

Characteristic Curves for TW

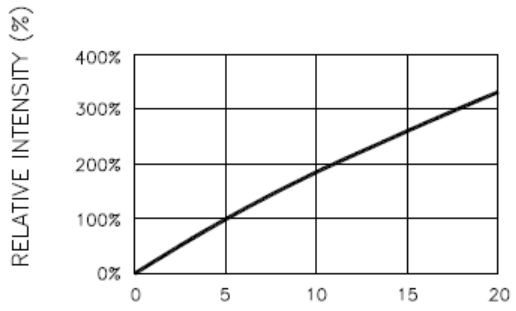


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

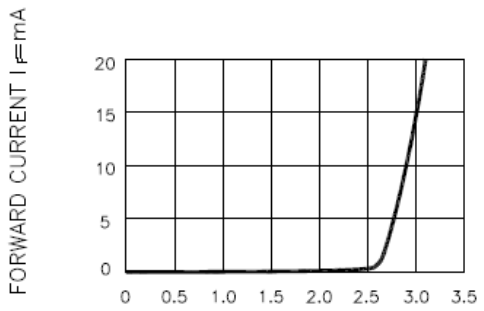


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

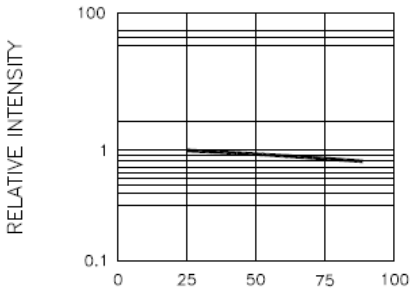


Fig.3 RELATIVE INTENSITY VS.LEAD TEMPERATURE
(PULSED 20 mA; 300us PULSE,10ms PERIOD)

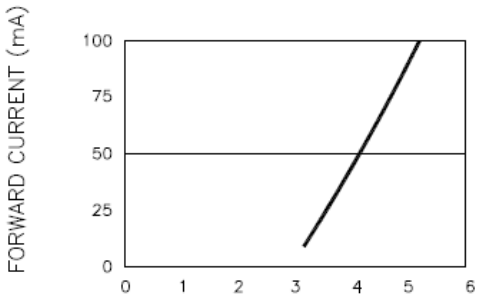


Fig.4 PEAK FORWARD VOLTAGE VS.FORWARD
(100us TEST PULSE, 1% DUTY CYCLE)

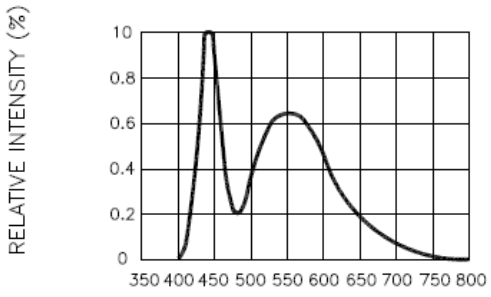


Fig.4 RELATIVE INTENSITY VS. WAVELENGTH

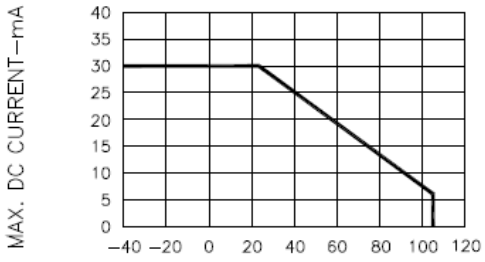


Fig.7 MAX. ALLOWABLE DC CURRENT
VS. AMBIENT TEMPERATURE

Characteristic Curves for UYG

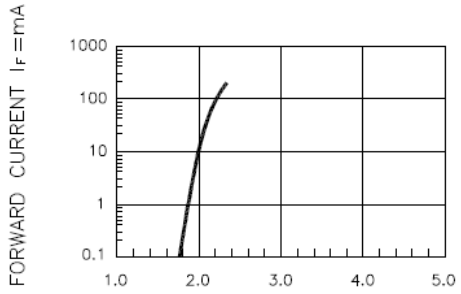


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

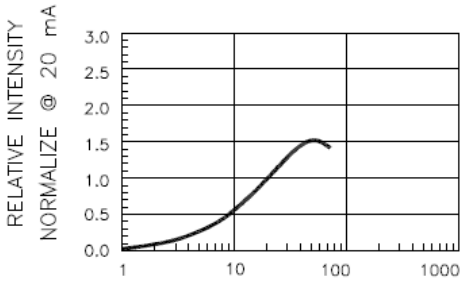


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

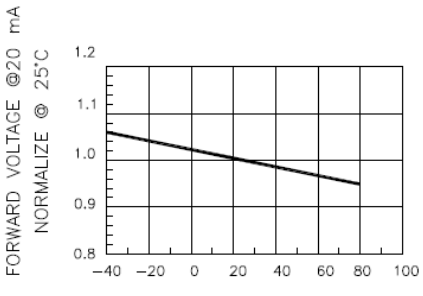


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

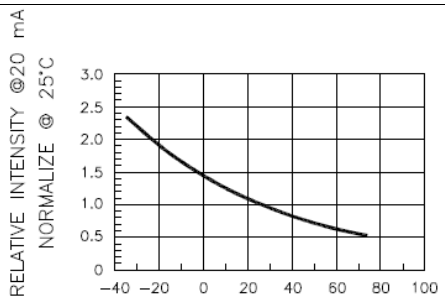


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

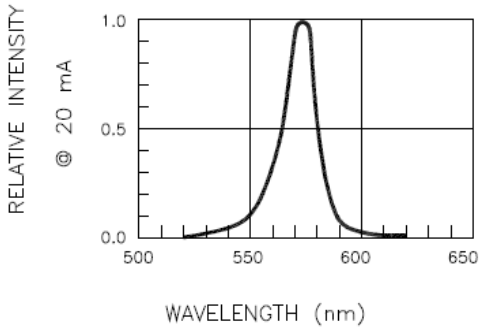


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

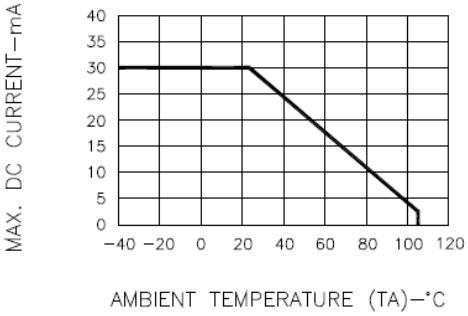


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

Characteristic Curves for UY

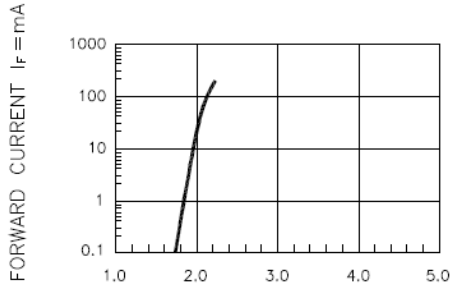


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

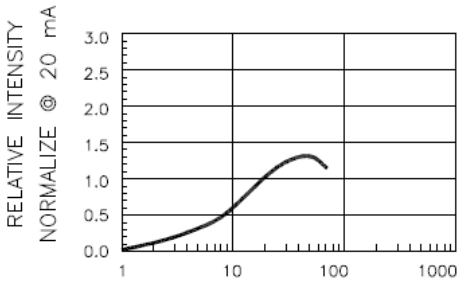


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

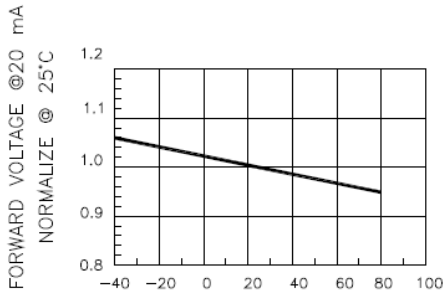


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

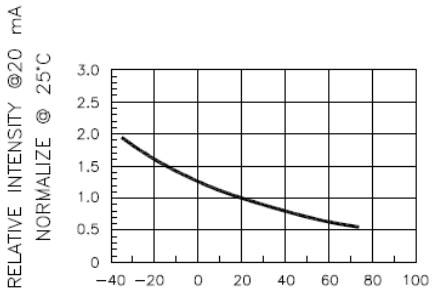


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

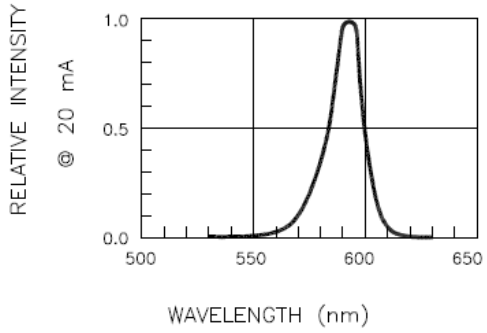


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

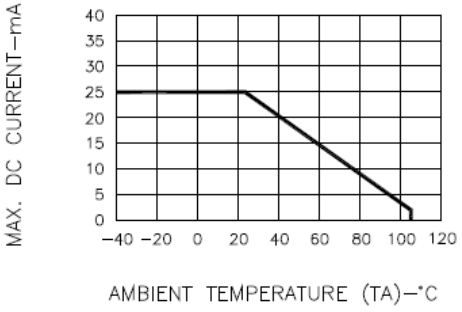


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

Characteristic Curves for UA

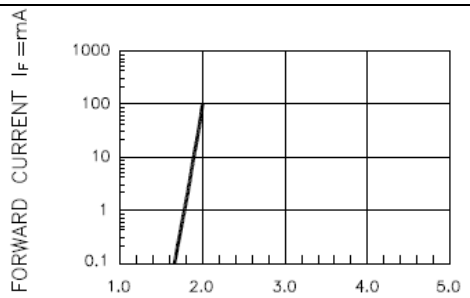


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

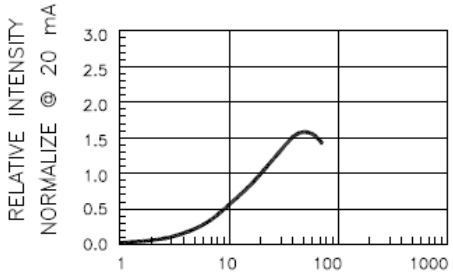


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

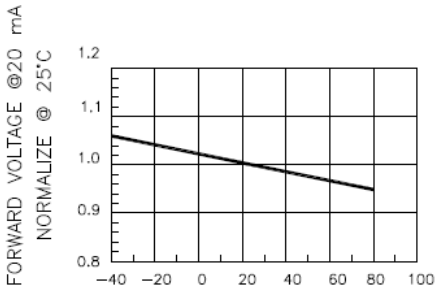


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

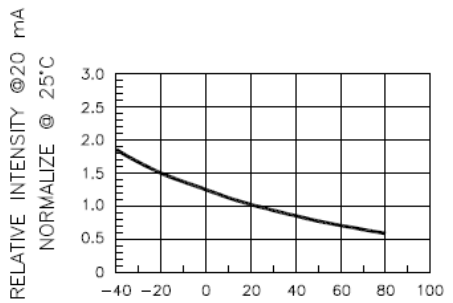


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

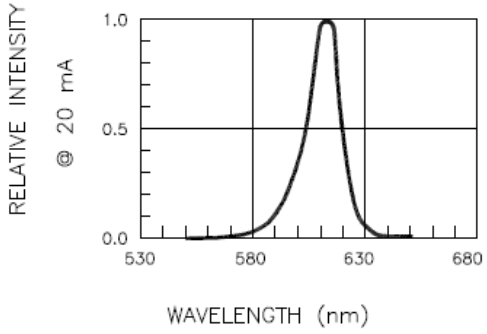


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

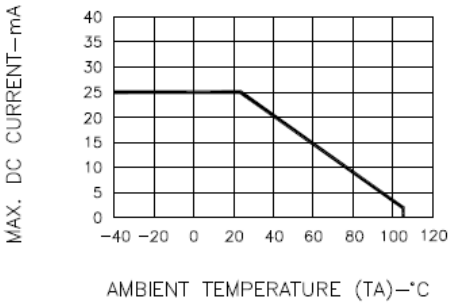


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

Characteristic Curves for UR

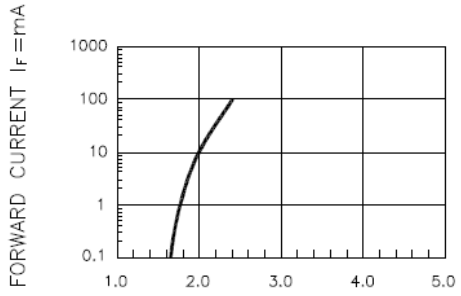


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

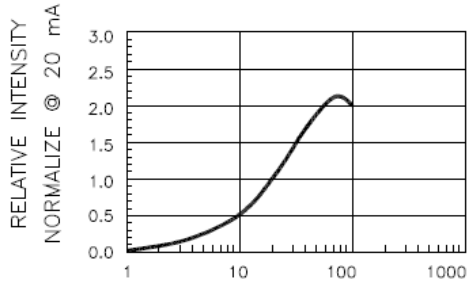


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

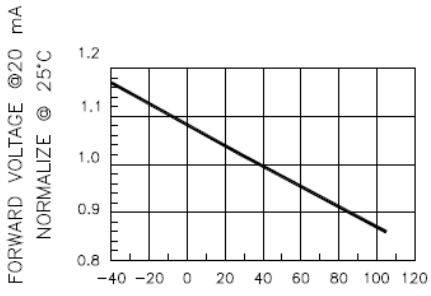


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

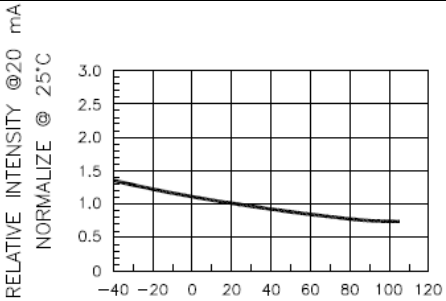


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

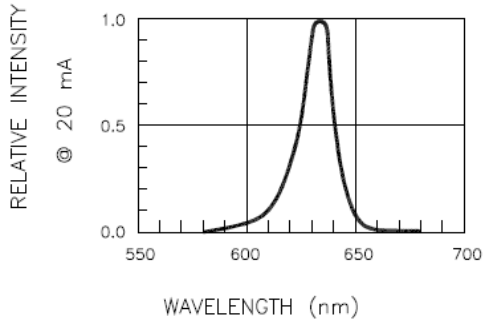


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

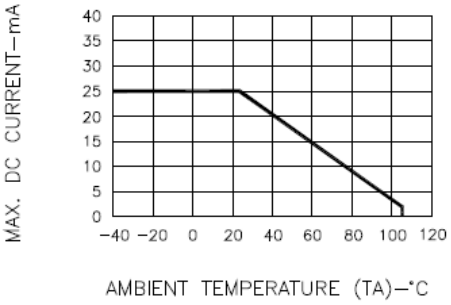


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

Characteristic Curves for USR

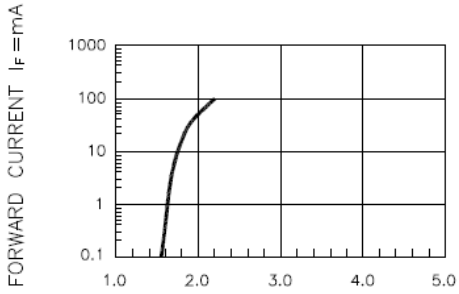


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

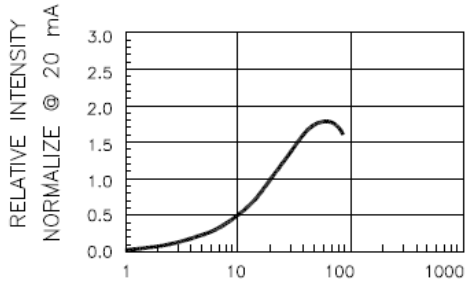


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

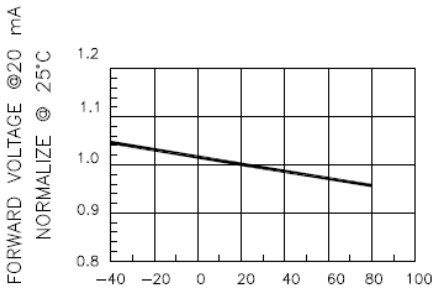


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

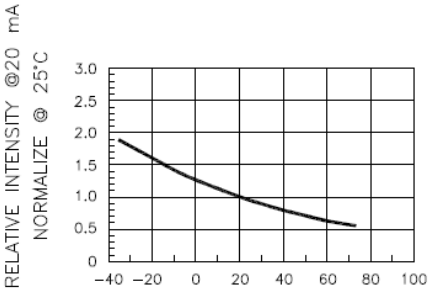


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

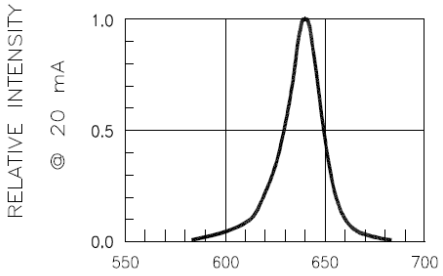


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

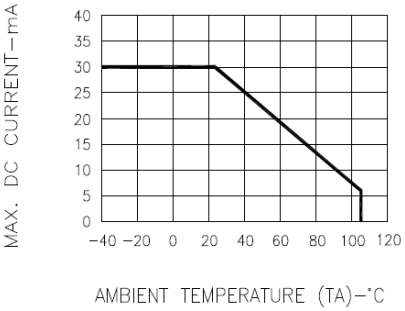
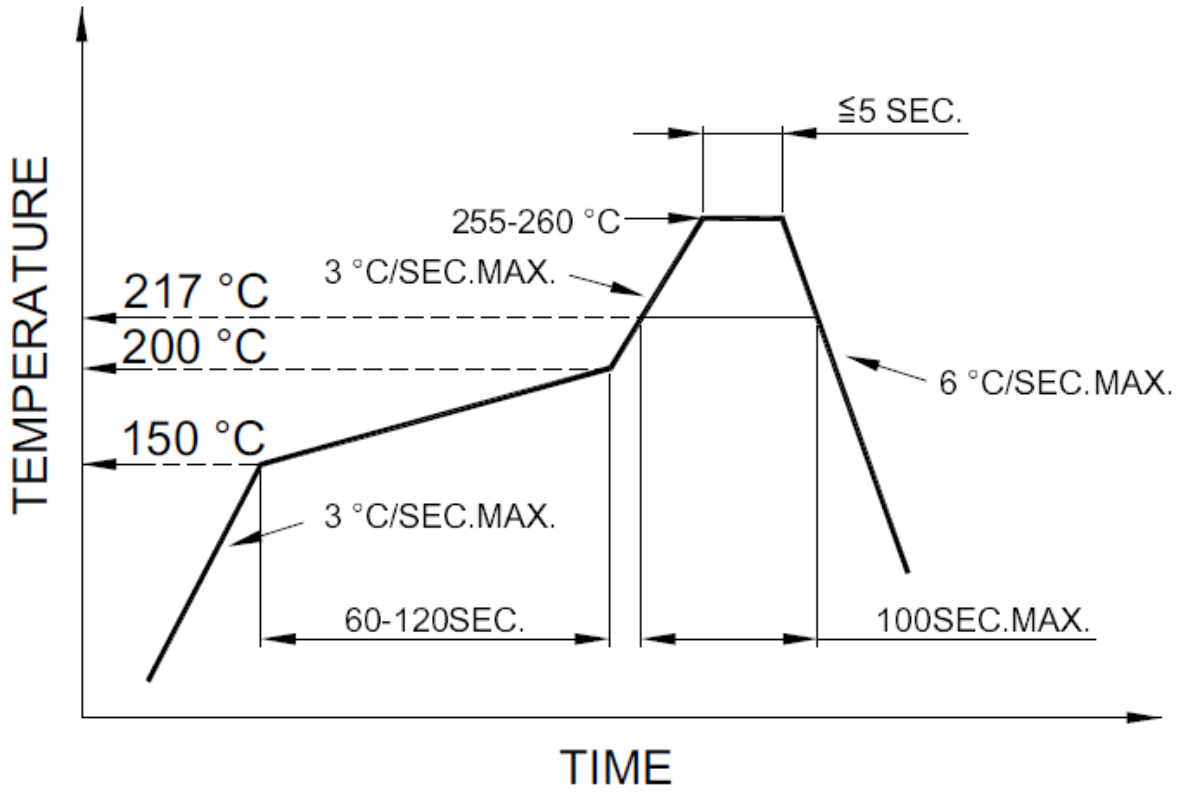


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

Reflow Soldering



Pb Free Reflow Soldering Profile

Soldering Iron

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

Rework

Rework should be completed within 3 second under 350°C

Revision History

Changes since last revision	Page	Version No.	Revision Date
Initial Release for HNSQ39		1.0	05-15-2013