

QT-Brightek SMD Super Thin Display Series

0.56" Dual Digit Display

Part No.: QBDST56ZXX

XX= Color

Z= 1: Common Cathode

Z = 0: Common Anode

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Electrical / Optical Characteristic: (Ta=25 °C)

Product		Material	Color	I _F (mA)	V _F (V)		λ _d (nm)			I _v (mcd) @I _F =5mA
CC	CA				Typ.	Max.	Min.	Typ.	Max.	Typ.
QBDST561R	QBDST560R	AlInGaP	Red	20	2.0	2.8	--	625	--	5
QBDST561S	QBDST560S	AlInGaP	Deep Red	20	2.0	2.8	--	645	--	4
QBDST561Y	QBDST560Y	AlInGaP	Yellow	20	2.0	2.8	--	590	--	12
QBDST561O	QBDST560O	AlInGaP	Orange	20	2.0	2.8	--	605	--	14
QBDST561AG	QBDST560AG	AlInGaP	Yellow Green	20	2.1	2.8	--	570	--	2
QBDST561IG	QBDST560IG	InGaN	True Green	20	3.2	4.0	--	525	--	50
QBDST561IB	QBDST560IB	InGaN	Blue	20	3.2	4.0	--	470	--	8
							Chromaticity Coordinate			
QBDST561IW	QBDST560IW	InGaN	Blue	20	3.2	4.0	--	X:0.27 Y:0.25	--	40

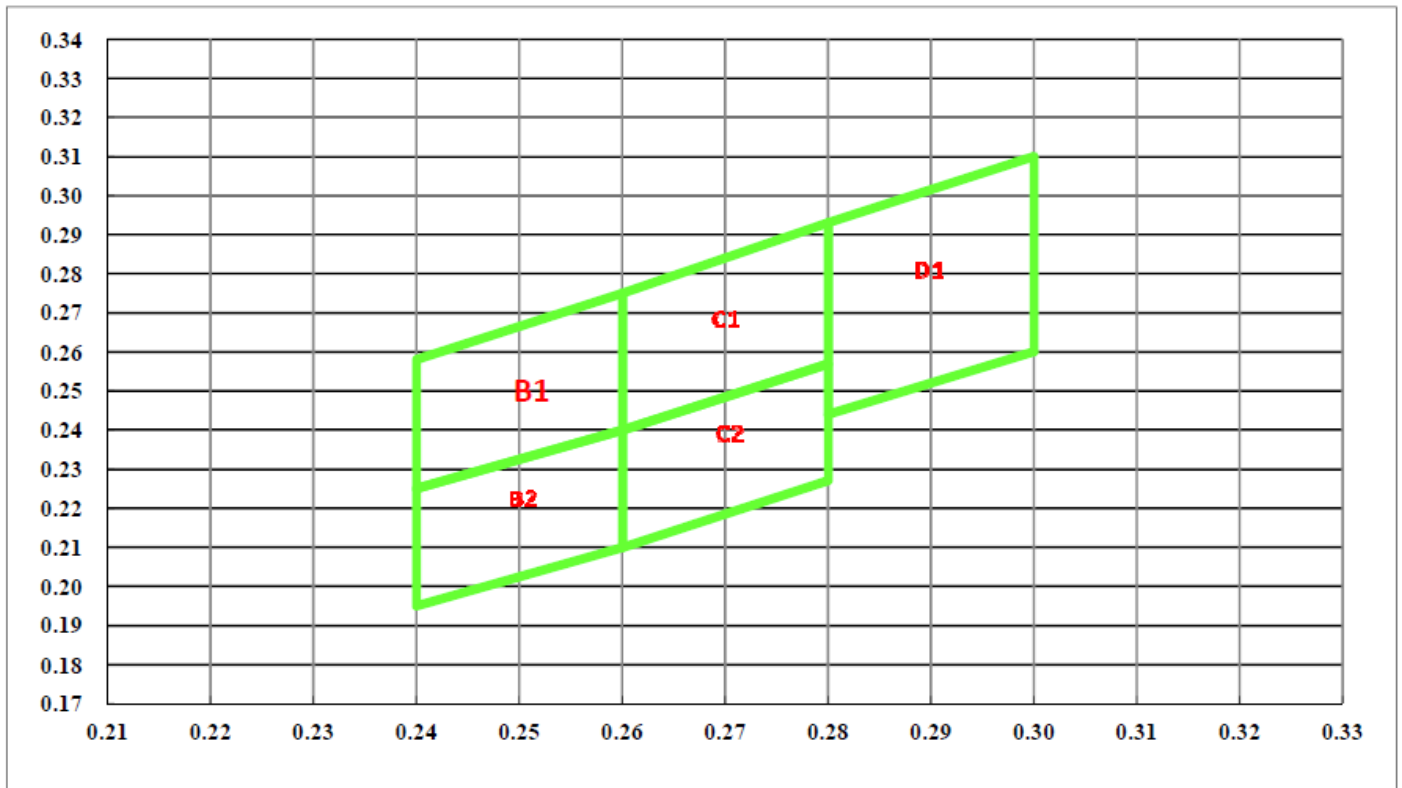
Absolute Maximum Rating

Material	P _d (mW)	Derating linear from 25°C per dice (mW/°C)	I _F (mA)	I _{PF} (mA)*	V _R (V)	T _{OP} (°C)	T _{ST} (°C)	T _{sol} (°C)**
AlInGaP	70	0.33	25	90	5	-40 to +105	-40 to +105	260
InGaN	114	0.4	30	100	5	-40 to +105	-40 to +105	260

*Duty 1/10 @ 1KHz

**IR Reflow for no more than 5 sec @ 260 °C

Correlated Color Temperature Chart



B1				
X	0.240	0.240	0.260	0.260
Y	0.225	0.258	0.275	0.240

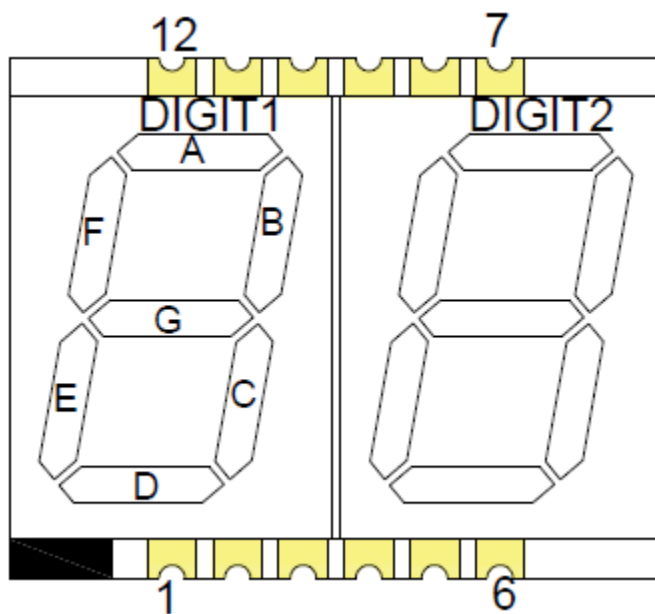
B2				
X	0.240	0.240	0.260	0.260
Y	0.195	0.225	0.240	0.210

C1				
X	0.260	0.260	0.280	0.280
Y	0.240	0.275	0.293	0.257

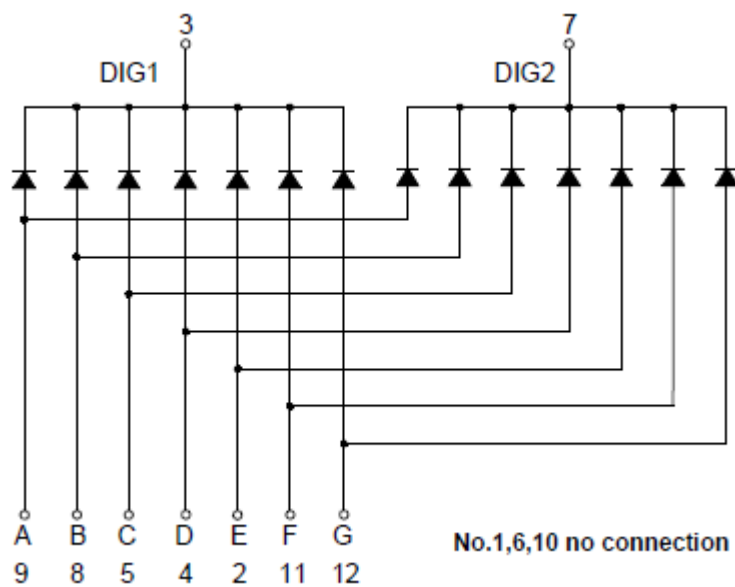
C2				
X	0.260	0.260	0.280	0.280
Y	0.210	0.240	0.257	0.227

D1				
X	0.280	0.280	0.300	0.300
Y	0.244	0.293	0.310	0.260

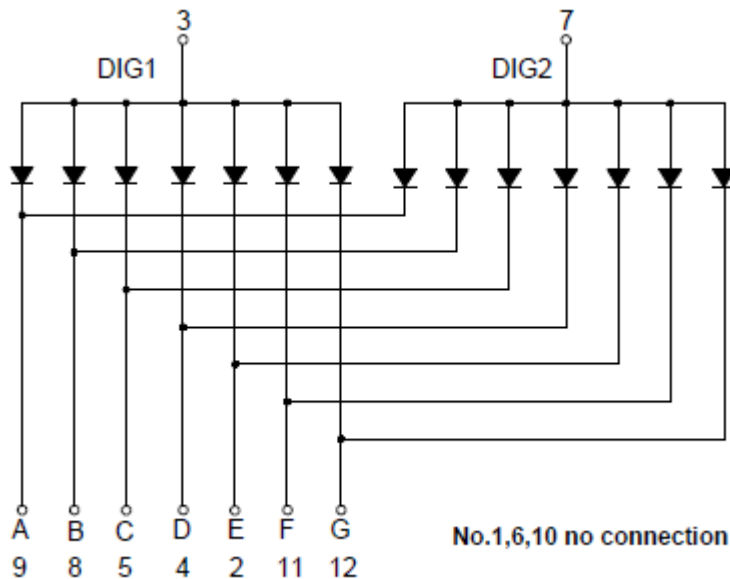
Pin Configuration



CC



CA



Characteristic Curves

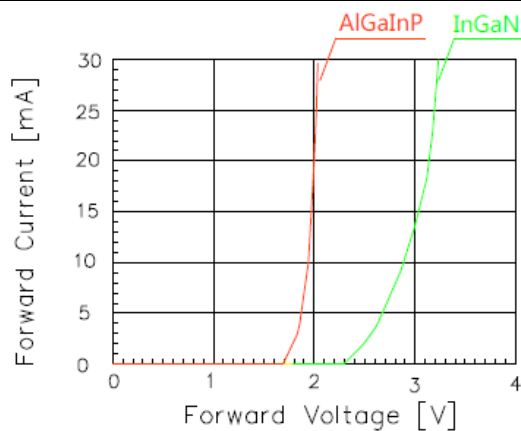


Fig 1. Forward Current vs. Forward Voltage

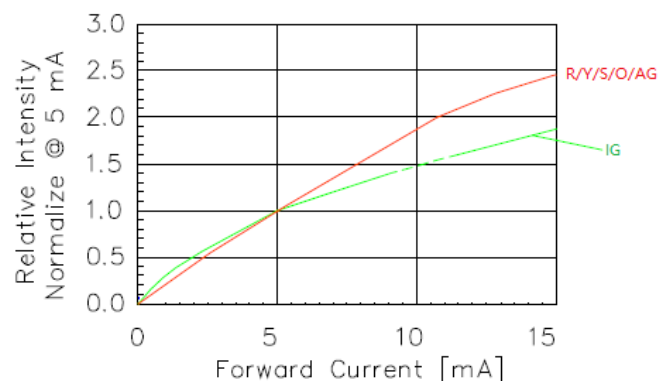


Fig 2. Relative Intensity vs. Forward Current

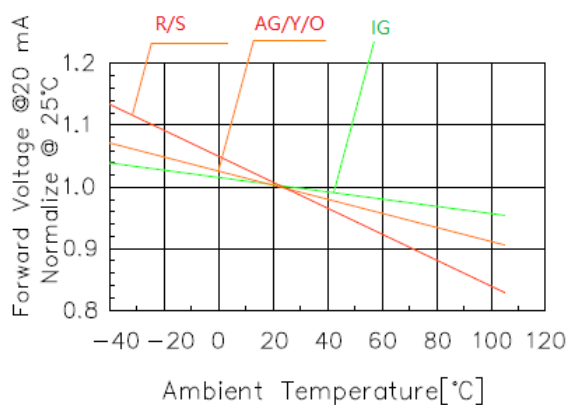


Fig 3. Forward Voltage vs. Temperature

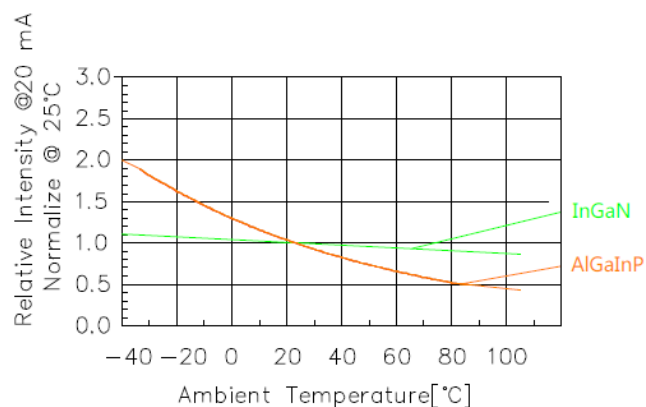


Fig 4. Relative Intensity vs. Temperature

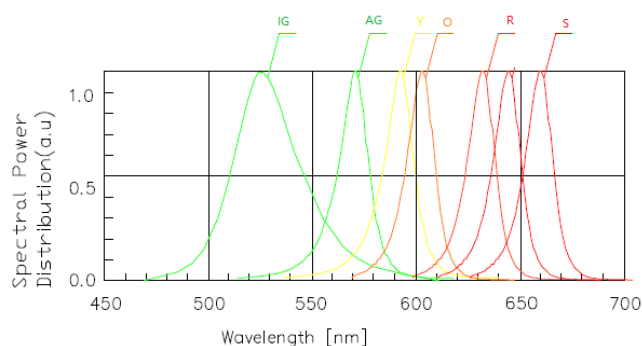


Fig 5. Spectral Power Distribution vs. Wavelength

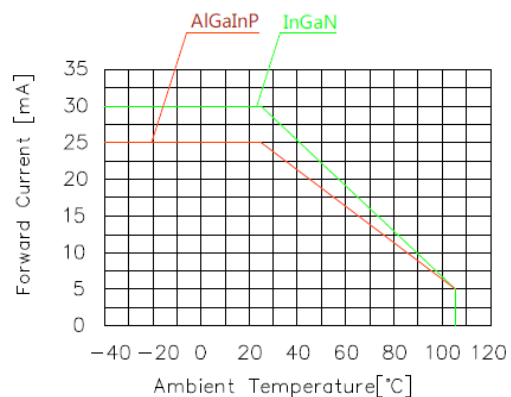


Fig 6. Forward current vs. Temperature

InGaN Blue

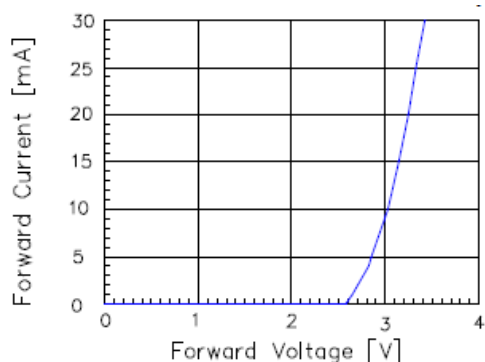


Fig 1. Forward Current vs. Forward Voltage

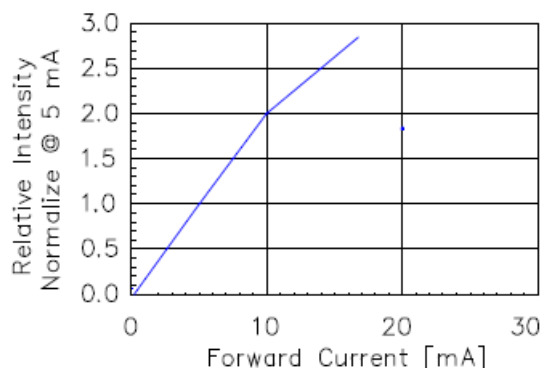


Fig 2. Relative Intensity vs. Forward Current

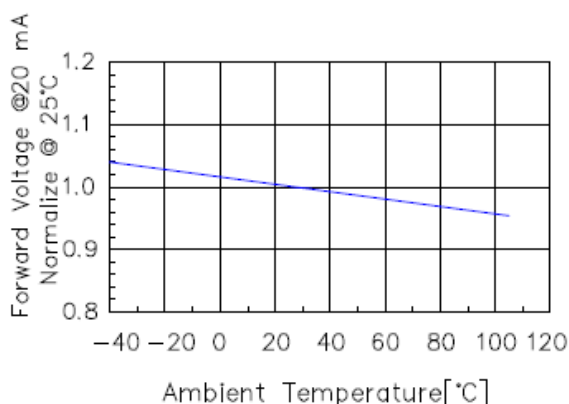


Fig 3. Forward Voltage vs. Temperature

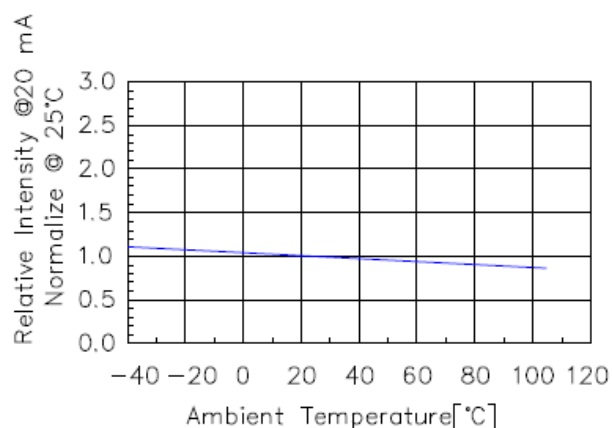


Fig 4. Relative Intensity vs. Temperature

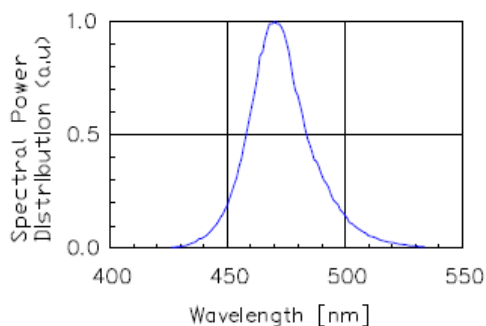


Fig 5. Spectral Power Distribution vs. Wavelength

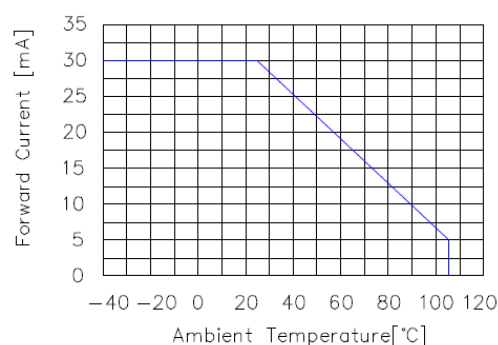


Fig 6. Forward current vs. Temperature

InGaN White

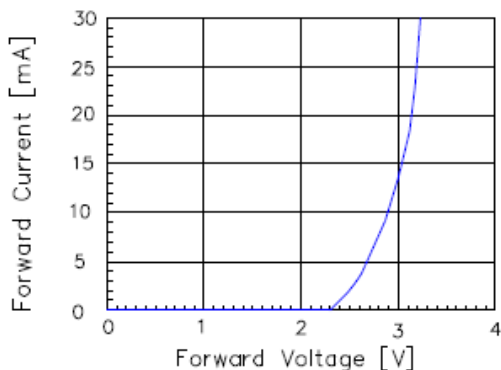


Fig 1. Forward Current vs. Forward Voltage

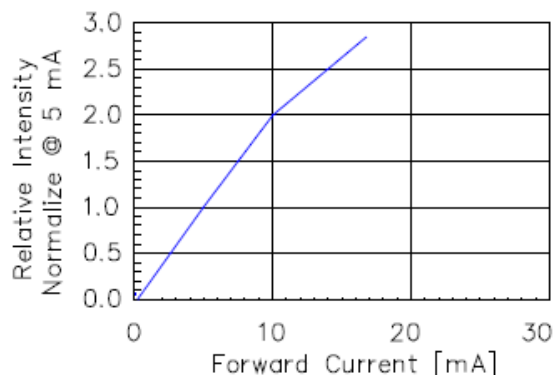


Fig 2. Relative Intensity vs. Forward Current

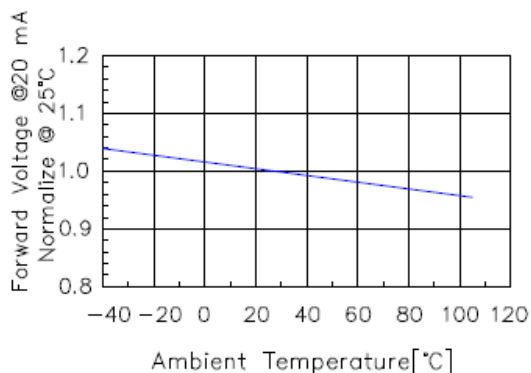


Fig 3. Forward Voltage vs. Temperature

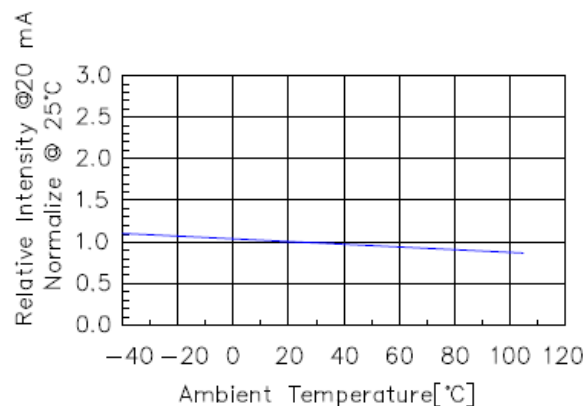


Fig 4. Relative Intensity vs. Temperature

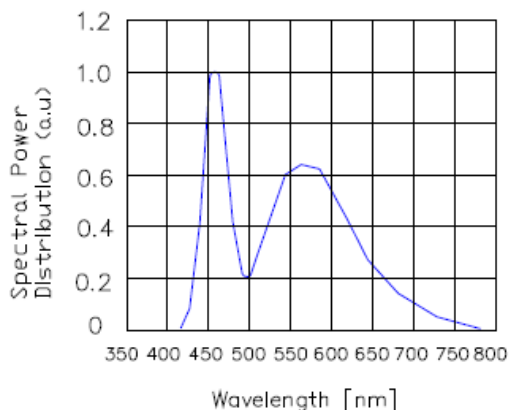


Fig 5. Spectral Power Distribution vs. Wavelength

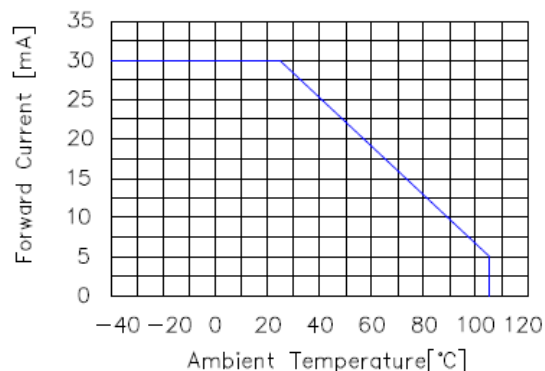
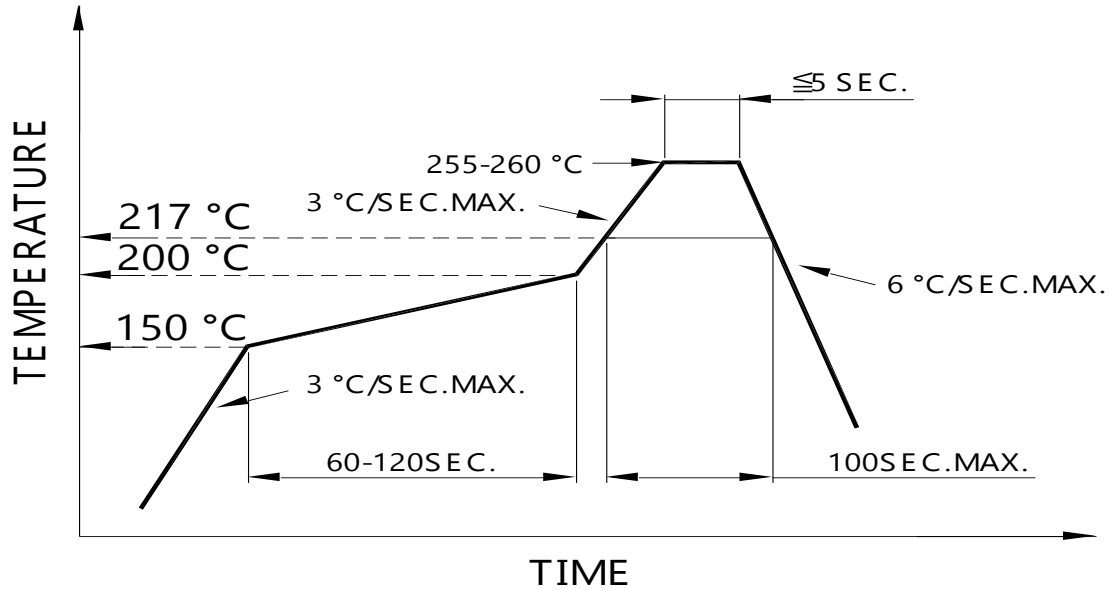


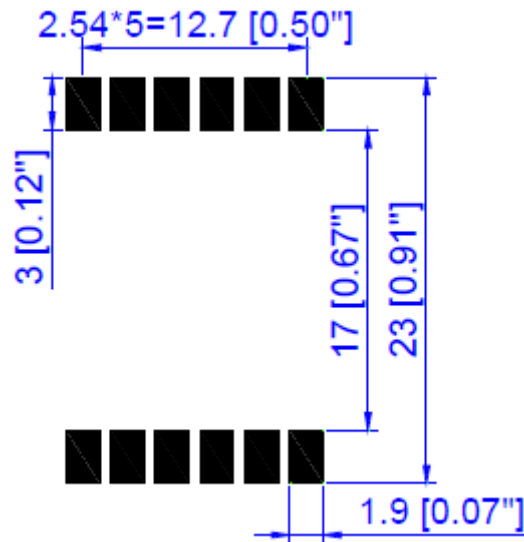
Fig 6. Forward current vs. Temperature

Solder Profile & Footprint

Pb free reflow soldering Profile



Recommended Pad Layout

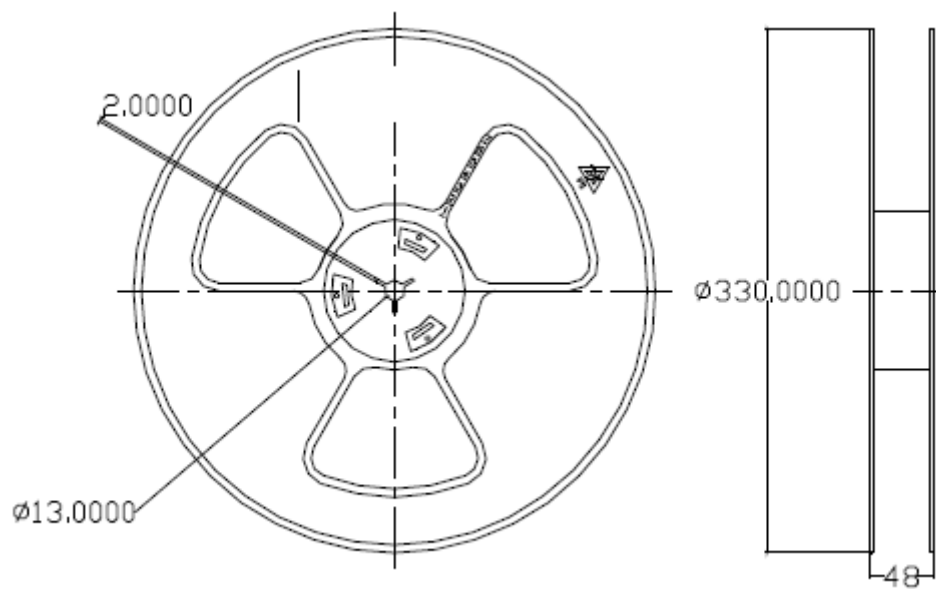


Units: mm

Tolerance: ±0.25mm

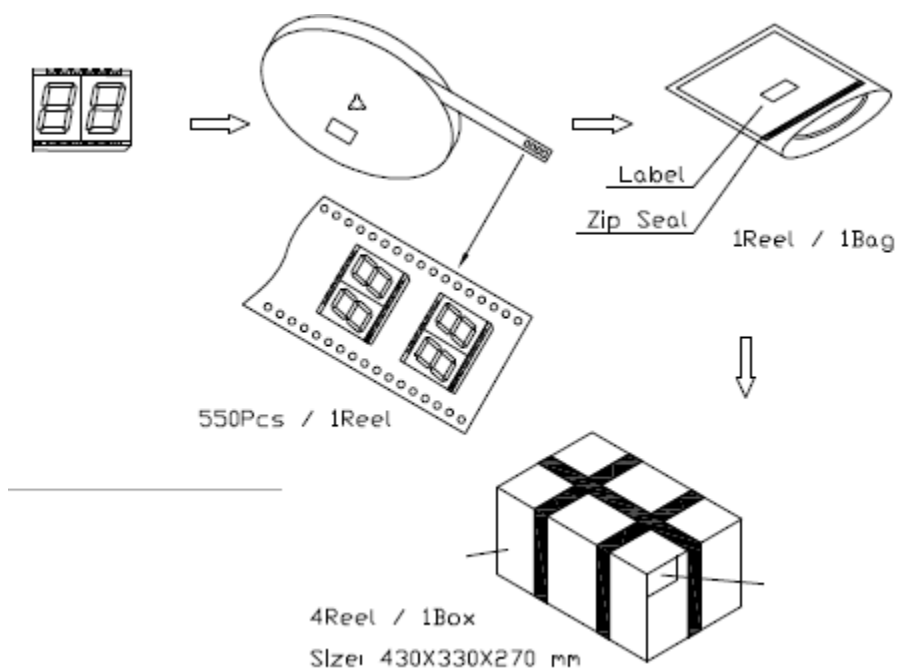
Packing & Labeling

Reel Dimensions:



Unit: mm

Packing Method:



Ordering Information

Product		Orderable Part #		Spec Range	Quantity per Reel
CC	CA	CC	CA		
QBDST561R	QBDST560R	QBDST561R	QBDST560R	Iv=5mcd typ. @ If=5mA / λ_D :625nm typ.	550
QBDST561S	QBDST560S	QBDST561S	QBDST560S	Iv=4mcd typ. @ If=5mA / λ_D :645nm typ.	550
QBDST561Y	QBDST560Y	QBDST561Y	QBDST560Y	Iv=12mcd typ. @ If=5mA / λ_D :590nm typ.	550
QBDST561O	QBDST560O	QBDST561O	QBDST560O	Iv=14mcd typ. @ If=5mA / λ_D :605nm typ.	550
QBDST561AG	QBDST560AG	QBDST561AG	QBDST560AG	Iv=2mcd typ. @ If=5mA / λ_D :570nm typ.	550
QBDST561IG	QBDST560IG	QBDST561IG	QBDST560IG	Iv=50mcd typ. @ If=5mA / λ_D :525nm typ.	550
QBDST561IB	QBDST560IB	QBDST561IB	QBDST560IB	Iv=8mcd typ. @ If=5mA / λ_D :470nm typ.	550
QBDST561IW	QBDST560IW	QBDST561IW	QBDST560IW	Iv=40mcd typ. @ If=5mA / (X,Y)=(0.27, 0.25)	550

Revision History

Description:	Revision #	Revision Date
New Release of QBDST56ZXX	V1.0	01/16/2017

Disclaimer

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.