QT-Brightek SMD Display Series

0.20” Dual Digit SMD Display

Part No.: QBDS20ZXX

XX= Color
Z= 1: Common Cathode
Z = 0: Common Anode

Table of Contents:

Introduction

Feature:

- 0.20” dual digit seven segments display
- Low power consumption
- Packed in tape & reel
- White segment and grey surface
- XX = color code
- Z=1: Common Cathode or 0: Common Anode

Description:

These 0.20” dual digit seven segments displays are made with white segment and grey surface. The viewing distance is up to seven meters.

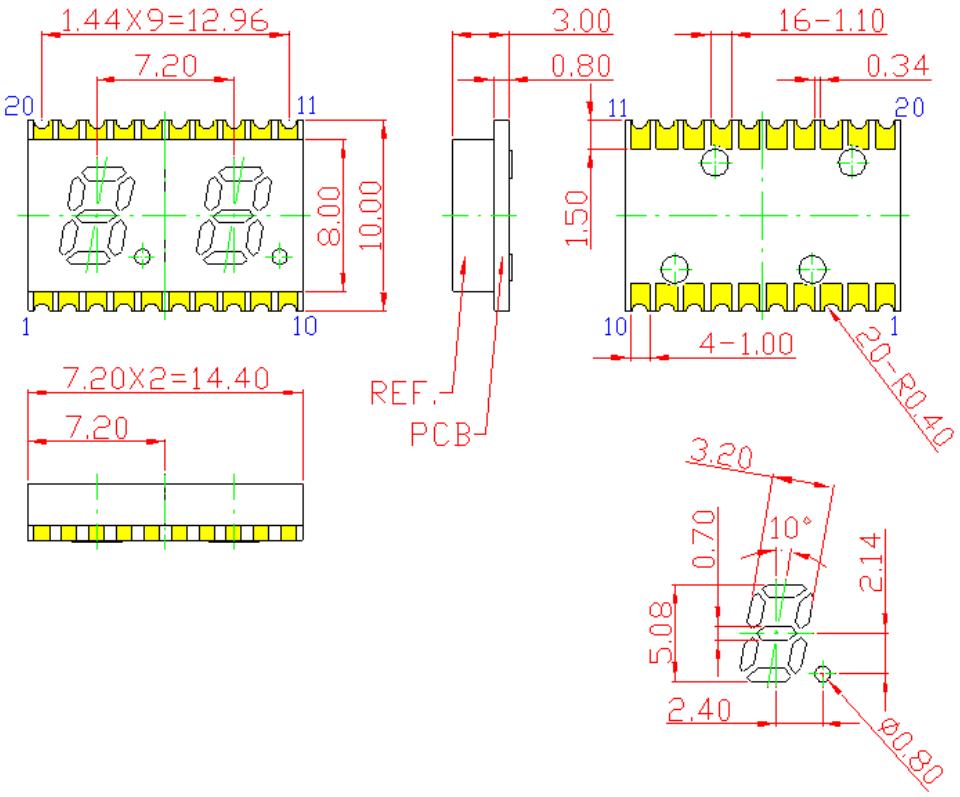
Application:

- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant

Dimension:



Units: mm / tolerance = +/-0.25mm

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

Product		Material	Color	I_F (mA)	V_F (V)		λ_d (nm)			I_V (mcd)
CC	CA				Typ.	Max.	Min.	Typ.	Max.	Typ.
QBDS201R	QBDS200R	AlInGaP	Red	20	2.0	2.6	-	625	-	23
QBDS201S	QBDS200S	AlInGaP	Deep Red	20	2.0	2.6	-	640	-	8
QBDS201Y	QBDS200Y	AlInGaP	Yellow	20	2.0	2.6	-	590	-	23
QBDS201O	QBDS200O	AlInGaP	Orange	20	2.0	2.6	-	610	-	23
QBDS201AG	QBDS200AG	AlInGaP	Yellow Green	20	2.0	2.5	-	571	-	9
QBDS201IG	QBDS200IG	InGaN	True Green	20	3.2	4.0	-	520	-	90
QBDS201IB	QBDS200IB	InGaN	Blue	20	3.2	4.0	-	470	-	55

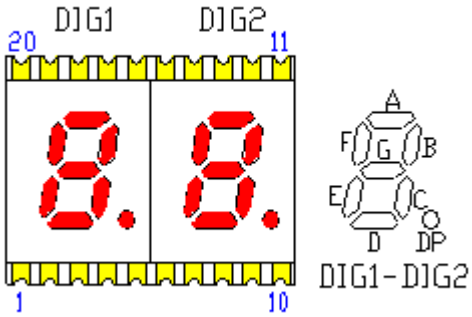
Absolute Maximum Rating

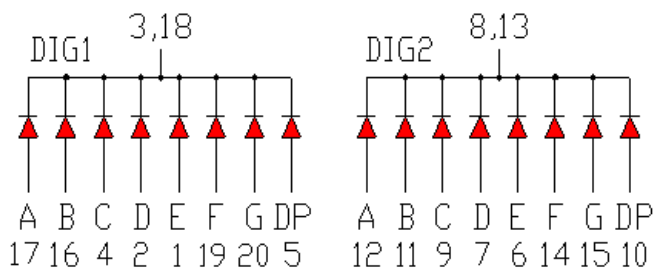
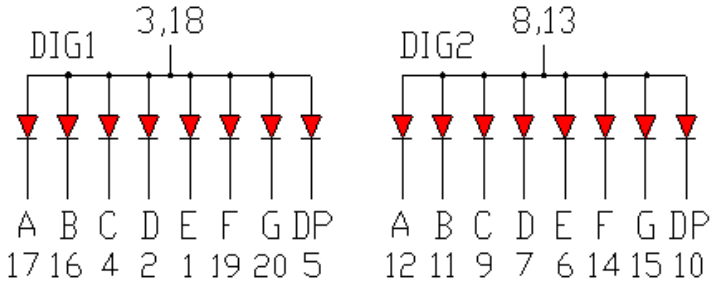
Material	P_d (mW)	Derating linear from 25C per dice (mA/C)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)	T_{SOL} (°C)**
AlInGaP	70	0.28	25	90	5	-40 to +105	-40 to +105	260
InGaN	120	0.3	30	100	5	-40 to +105	-40 to +105	260

*Duty 1/10 @ 1KHz

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

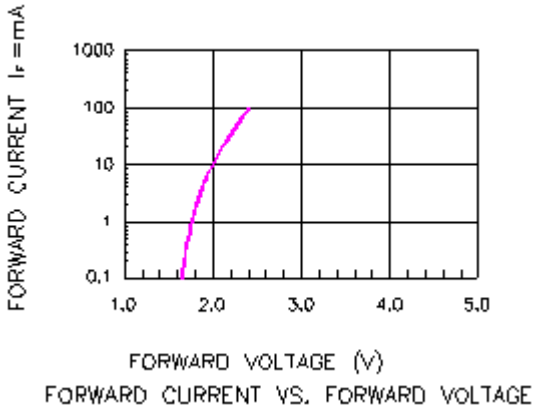
Pin Configuration



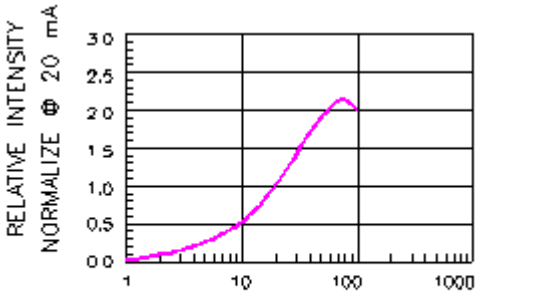
CC	CA
	

Characteristic Curves

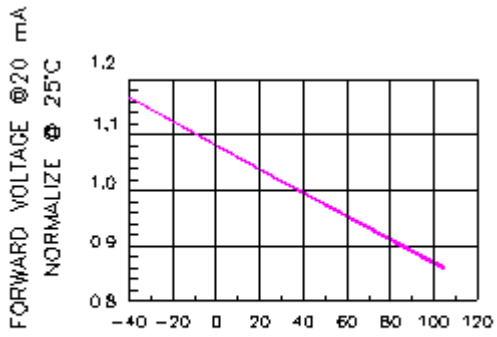
AlInGaP



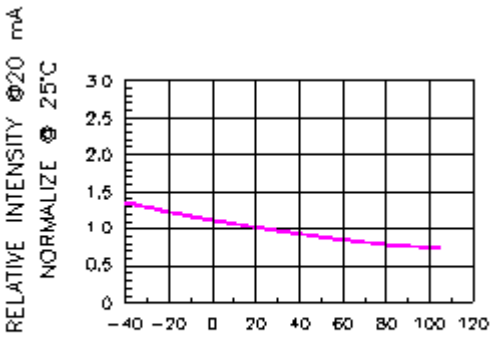
FORWARD CURRENT VS. FORWARD VOLTAGE



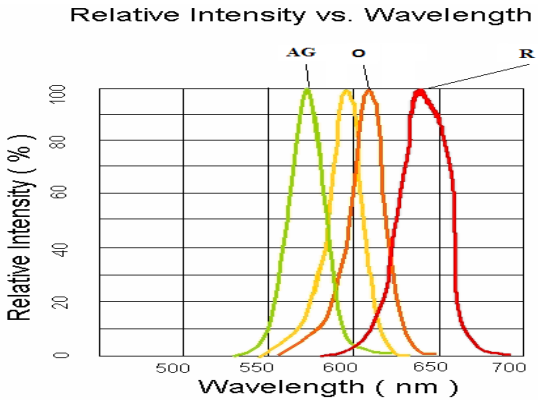
RELATIVE INTENSITY VS. FORWARD CURRENT

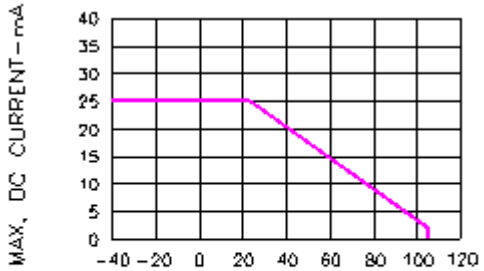


FORWARD VOLTAGE VS TEMPERATURE



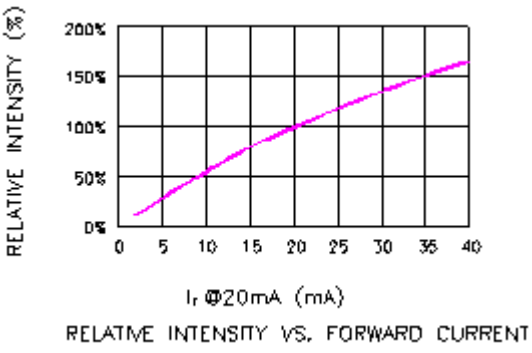
RELATIVE INTENSITY VS. TEMPERATURE



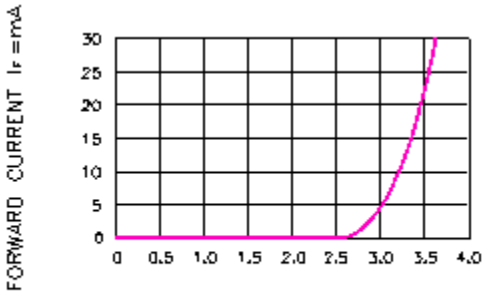


MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

InGaN



RELATIVE INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. FORWARD VOLTAGE

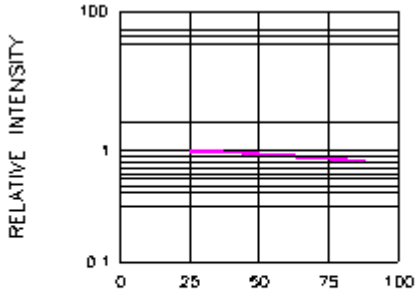


Fig.3 RELATIVE INTENSITY VS.LEAD TEMPERATURE
(PULSED 20 mA; 300us
PULSE,10ms PERIOD)

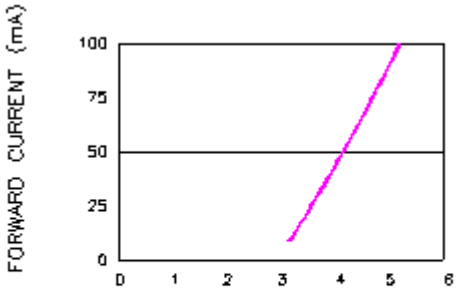
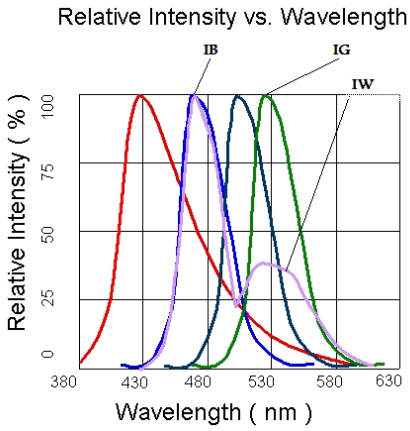
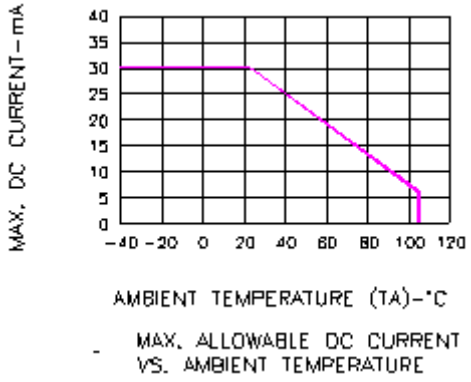


Fig.4 PEAK FORWARD VOLTAGE
VS.FORWARD(100us TEST PULSE,
1% DUTY CYCLE)

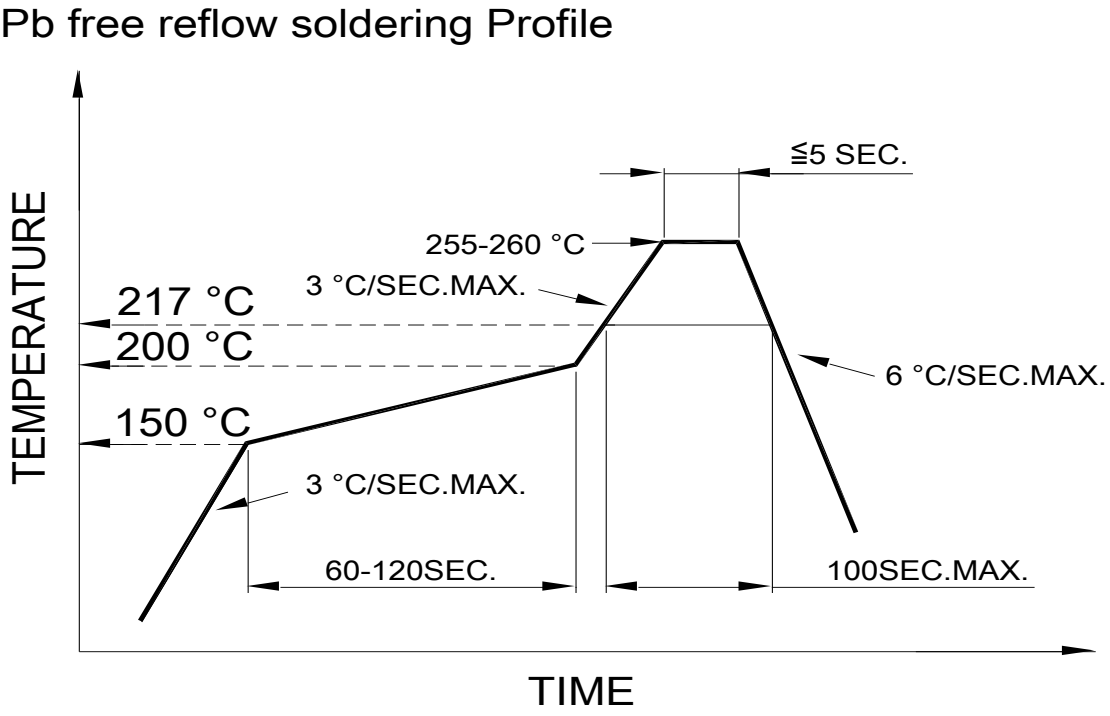




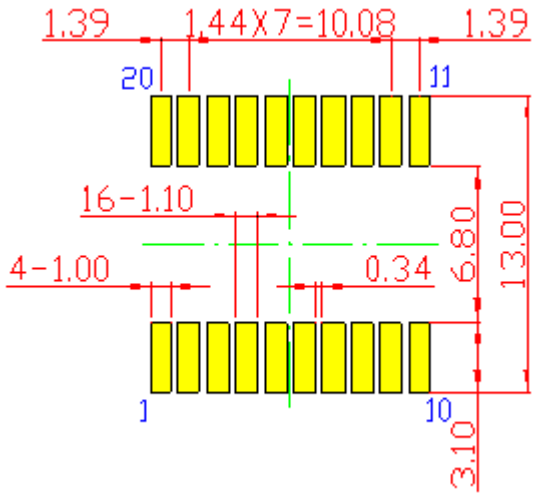
MAX. ALLOWABLE DC CURRENT
VS. AMBIENT TEMPERATURE

Solder Profile & Footprint

Lead-free Solder Profile:



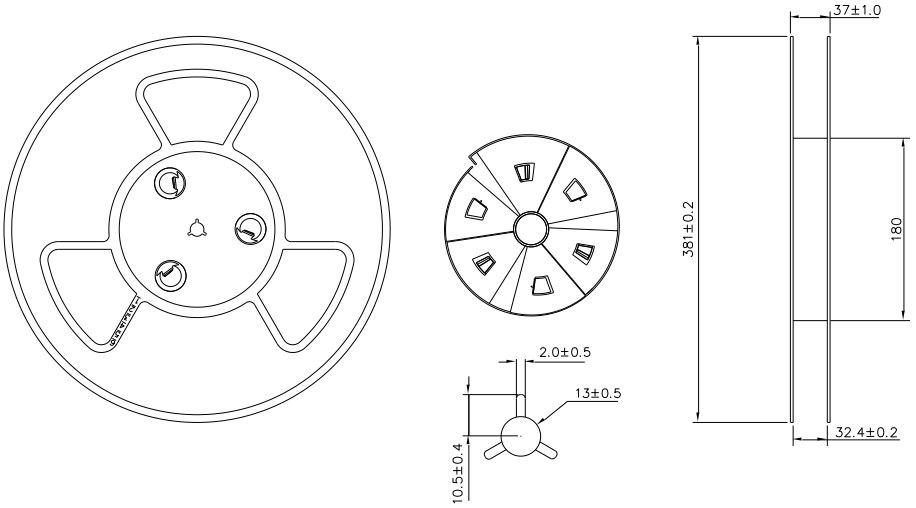
Recommended Pad Layout



Units: mm Tolerance: ± 0.25mm

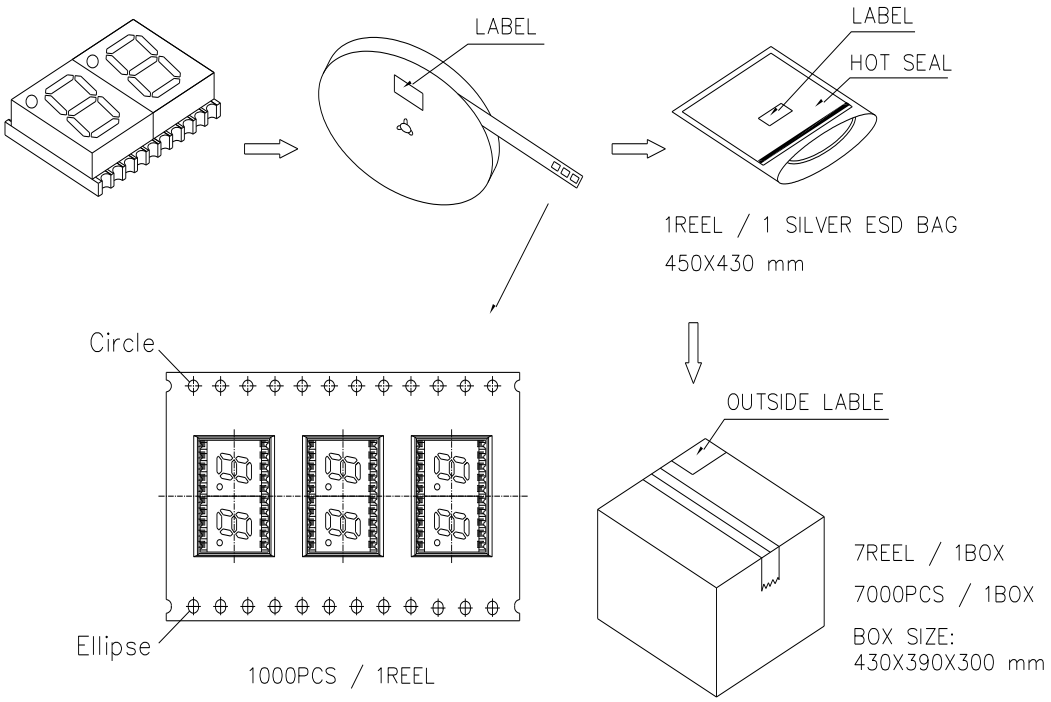
Packing & Labeling

Reel Dimension:



Unit: mm

Packing and Label Specification:



Ordering Information

Product		Orderable Part #		Spec Range	Quantity per Reel
CC	CA	CC	CA		
QBDS201R	QBDS200R	QBDS201R	QBDS200R	Iv=23mcd Typ. @ I_F=20mA, λ_D: 625nm typ.	1000
QBDS201S	QBDS200S	QBDS201S	QBDS200S	Iv=8mcd Typ. @ I_F=20mA, λ_D: 640nm typ.	1000
QBDS201Y	QBDS200Y	QBDS201Y	QBDS200Y	Iv=23mcd Typ. @ I_F=20mA, λ_D: 590nm typ.	1000
QBDS201O	QBDS200O	QBDS201O	QBDS200O	Iv=23mcd Typ. @ I_F=20mA, λ_D: 610nm typ.	1000
QBDS201AG	QBDS200AG	QBDS201AG	QBDS200AG	Iv=9mcd Typ. @ I_F=20mA, λ_D: 571nm typ.	1000
QBDS201IG	QBDS200IG	QBDS201IG	QBDS200IG	Iv=90mcd Typ. @ I_F=20mA, λ_D: 520nm typ.	1000
QBDS201IB	QBDS200IB	QBDS201IB	QBDS200IB	Iv=55mcd Typ. @ I_F=20mA, λ_D: 470nm typ.	1000

Revision History

Description:	Revision #	Revision Date
New Release of QBDS20ZXX	V1.0	04/27/2015
Add more color options / Update mechanical dimension drawing / Fix packing spec error	V1.1	10/27/2015

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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.