HOW TO USE DISPLAY

■SOLDERING:

1. Soldering Bath -- 260℃±5℃within 3 seconds. (Dip depth should under 1/16 inch below seating plane.)
2. Soldering Iron -- Under 40W within 3 seconds.(Tip temperature:205℃±5℃)
3. The neutrality flux must be used before soldering.

■CLEANING:

1. Do not use unspecified chemical liquid to clean display.They could harm the display.If cleaning is necessary,wipe the pin out with alcohol,Freon TE or Chlorosen at normal temperature for less than 1 minute,or wipe the surface with alcohol.When other chemical solutions not specified are used.It may cause crack or haze on the surface of the display.

■PREVENTING OVER CURRENT:

1. Be not overcurrent.
2. In order to cooperate BRIGHT LED displays under stable conditions. Put protective resistors in series. Resistor values can be determined by supplying voltage or current for the LED display. Recommended current is in the range of forward current 5mA to 20mA.
3. Circuit must be designed so that overvoltage (overcurrent) is not applied to the LED during on/off switching.Transient or pulse current will damage the junction of LED die.

■BRIGHTNESS:

1. For obtainning even brightness.Each segment should be at the same current,so the best circuit design is to supply constant current for each segment.
2. To increase brightness. Increase current. But do not over maximum rating.
3. To check the appearance defect of LED display, the viewing distance should be 15 cm minimum.
4. For obtainning more uniform brightness on yellow and green display.The supplying forward current should be over 10mA,but do not be over rating.

QUALITY CONTROL AND ASSURANCE

RELIABILITY TESTS

CLASSIFICATION	TEST ITEM	DESCRIPTION AND TEST CONDITION	REFERENCE STANDARD
ENDURANCE TEST	OPERATION LIFE	To evaluate resistance of the device when it operated at electrical stress Ta=under room temperature If=12mA~25mA per segment or Ip=80mA/duty=1/8, Pw=1.25mS Ip=160mA/duty=1/16,Pw=1.mS(DOT) Test time=1000HRS(-24HRS,+72HRS)	MIL-STD-750:1036 MIL-STD-883:1005 JIS C 70021:B-1
	HIGH TEMPERATURE HIGH HUMIDITY STORAGE	To evaluate moisture resistance of the device when it stored for a long term at high temperature and high humidity Ta=65±5℃ RH=90~95%RH Test time=240HRS±2HRS	MIL-STD-202:103D JIS C 7021:B-11
	HIGH TEMPERATURE HIGH HUMIDITY REVERSE BIAS	To evaluate resistance of leakage current against long term thermal,humidity,and electrical stress Ta=65±5℃ RH=90~95% VR=5V Test time=500HRS(-24HRS+48HRS)	
	HIGH TEMPERATURE STORAGE	To evaluate device′s durability for long term storage in high temperature Ta=85±5℃(COB:Ta=65±5℃) Test time=1000HRS(-24HRS,+72HRS)	MIL-STD-883:1008 JIS C 7021:B-10
	LOW TEMPERATURE STORAGE	To evaluate device′s durability for long term storage in low high temperature Ta=-35±5℃ Test time=1000HRS(-24HRS,+72HRS)	JIS C 7021:B-12
ENVIRONMENTAL TEST	TEMPERATURE CYCLING	To evaluate resistance of devices under thermal stress,expansion and contraction 85℃~25℃~ -35℃~25℃ 30min 5min 30min 5min 10 cycles (COB:Thot=65℃ Tcold=-25℃)	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS C 7021:A-4
	THERMAL SHOCK	To evaluate device′s structural and mechanical resistance when suddenly exposed at serious changes 85±5℃~-35±5℃ 10min 10min 10 cycles (COB:Thot=65℃ Tcold=-25℃)	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011
	SOLDER RESISTANCE	To evaluate resistance of thermal stress caused by soldering T.sol=260±5℃ Dwell time=10±1sec	MIL-STD-202:210A MIL-STD-750:2031 JIS C 7021: A-1
	SOLDERABILITY	To evaluate solderability on leads of device T.sol=230±5℃ Dwell time=5±1sec	MIL-STD-202:208D MIL-STD-750:2026 MIL-STD-883:2003 JIS C 7021:A-2