

Surface Mount LEDs

Order code	Manufacturer code	Description
72-8770	KM-23ID	RED SOT-23 SMT LED
72-8775	KM-23SRD	S/RED DIFF.SOT-23 LED
72-8780	KM-23SRC	S/RED CLR SOT-23 LED
72-8785	KM-23SGD	GREEN SOT-23 LED
72-8790	KM-23YD	YELLOW SOT-23 LED
72-8795	KM-23ESGW	RED/GRN DIFF.SMT LED
72-8800	KM-23ESGC	RED/GRN CLR SMT LED
72-8820	KM-23ID.	REEL 2000 RED SOT-23 SMT LED LEAD FREE
72-8825	KM-23SRD.	RL 2000 S/RED DIFF.SOT-23 LED LEAD FREE
72-8830	KM-23SRC.	RL 2000 S/RED CLEAR SOT-23 LED
72-8835	KM-23SGD.	RL 2000 GREEN SOT-23 SMT LED (LEAD FREE)
72-8840	KM-23YD.	RL 2000 YELLOW SOT-23 SMT LED LEADFREE
72-8845	KM-23ESGW.	RL 2000 RED/GRN DIFF.SMT LED
72-8850	KM-23ESGC.	RL 2000 RED/GRN CLEAR SMT LED

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The enclosed information is believed to be correct, Information may change 'without notice' due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 04/07/2003

Features

- SOT-23 PACKAGE SURFACE MOUNT LED LAMP.
- LOW POWER CONSUMPTION.
- BOTH SINGLE CHIP AND TWO CHIPS VERSION ARE AVAILABLE.
- LONG LIFE - SOLID STATE RELIABILITY.

Description

The Bright Red source color devices are made with Gallium Phosphide Red Light Emitting Diode.

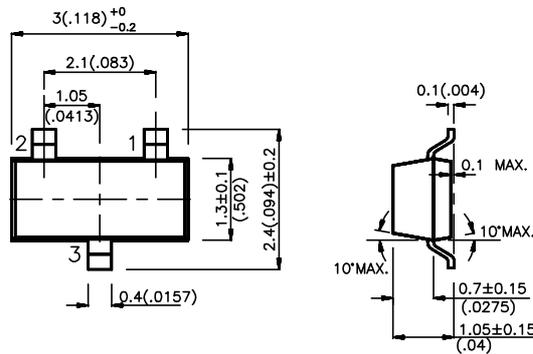
The Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

Package Dimensions

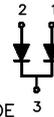


KM-23 SINGLE CHIP (SR EXCEPTED)	
1	N.C.
2	ANODE
3	CATHODE

KM-23SRx	
1	N.C.
2	CATHODE
3	ANODE

KM-23ESGW
KM-23ESGC

- 1 ANODE RED
- 2 ANODE GREEN
- 3 COMMON CATHODE



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
3. Lead spacing is measured where the lead emerge package.
4. Specifications are subjected to change without notice.

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20 mA		Viewing Angle
			Min.	Max.	$2\theta_{1/2}$
KM-23HD	BRIGHT RED (GaP)	RED DIFFUSED	0.5	1.25	140°
KM-23HT		RED TRANSPARENT	0.5	1.25	140°
KM-23HC		WATER CLEAR	0.5	1.25	140°
KM-23ID	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	8	32	140°
KM-23IT		RED TRANSPARENT	8	32	140°
KM-23EC		WATER CLEAR	8	32	140°
KM-23YD	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	5	12.5	140°
KM-23YT		YELLOW TRANSPARENT	5	12.5	140°
KM-23YC		WATER CLEAR	5	12.5	140°
KM-23SGD	SUPER BRIGHT GREEN (GaP)	GREEN DIFFUSED	8	32	140°
KM-23SGT		GREEN TRANSPARENT	8	32	140°
KM-23SGC		WATER CLEAR	8	32	140°
KM-23SRD	SUPER BRIGHT RED (GaAlAs)	RED DIFFUSED	50	90	140°
KM-23SRT		RED TRANSPARENT	50	90	140°
KM-23SRC		WATER CLEAR	50	90	140°
KM-23ESGW	HIGH EFFICIENCY RED (GaAsP/GaP)	WHITE DIFFUSED	8	32	140°
	SUPER BRIGHT GREEN (GaP)		8	32	
KM-23ESGC	HIGH EFFICIENCY RED (GaAsP/GaP)	WATER CLEAR	8	32	140°
	SUPER BRIGHT GREEN (GaP)		8	32	

Note:

1. $\theta_{1/2}$ is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

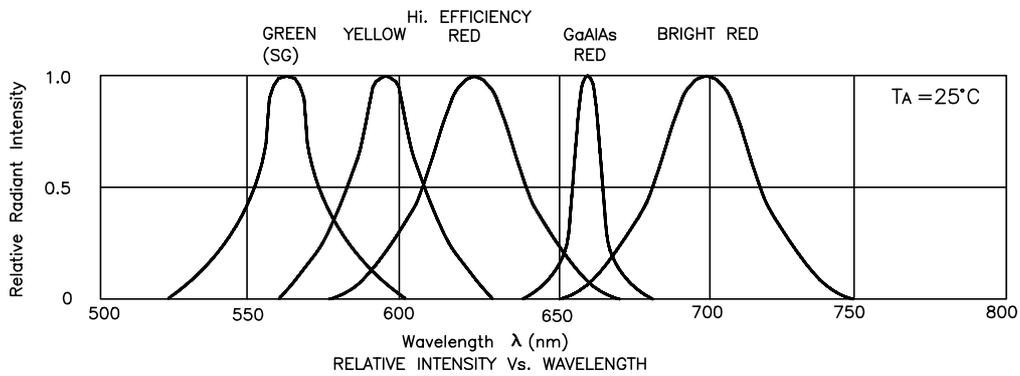
Electrical / Optical Characteristics at T_A=25° C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λ_{peak}	Peak Wavelength	Bright Red High Efficiency Red Super Bright Green Yellow Super Bright Red	700 625 565 590 660		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	Bright Red High Efficiency Red Super Bright Green Yellow Super Bright Red	45 45 30 35 20		nm	IF=20mA
C	Capacitance	Bright Red High Efficiency Red Super Bright Green Yellow Super Bright Red	40 12 45 10 95		pF	VF=0V;f=1MHz
V _F	Forward Voltage	Bright Red High Efficiency Red Super Bright Green Yellow Super Bright Red	2.0 2.0 2.2 2.1 1.85	2.5 2.5 2.5 2.5 2.5	V	IF=20mA
I _R	Reverse Current	All	10		uA	VR = 5V

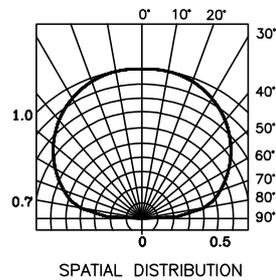
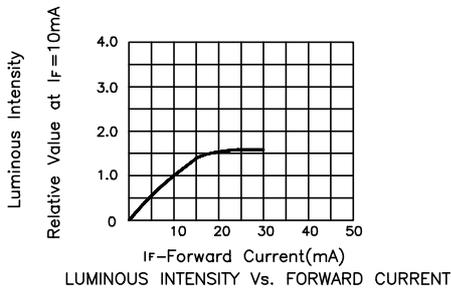
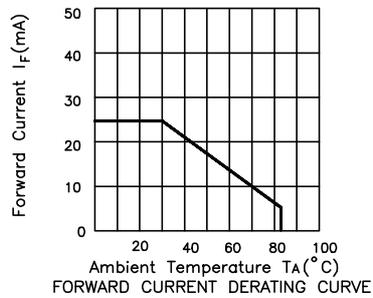
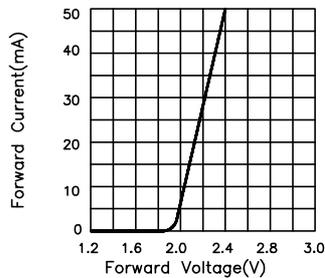
Absolute Maximum Ratings at $T_A=25^{\circ}\text{C}$

Parameter	Bright Red	High Efficiency Red	Yellow	Super Bright Red	Super Bright Green	Units
Power dissipation	120	105	105	100	105	mW
DC Forward Current	25	30	30	30	25	mA
Peak Forward Current [1]	150	150	150	150	150	mA
Reverse Voltage	5	5	5	5	5	V
Operating/Storage Temperature	-40 °C To +85 °C					

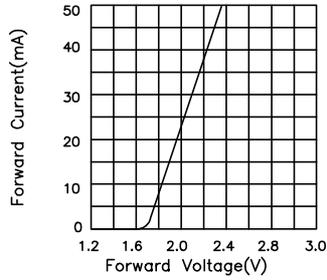
Note:
1. 1/10 Duty Cycle, 0.1ms Pulse Width .



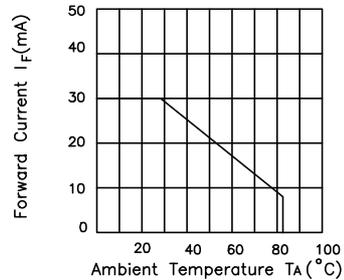
Bright Red KM-23HD, KM23HT, KM-23HC



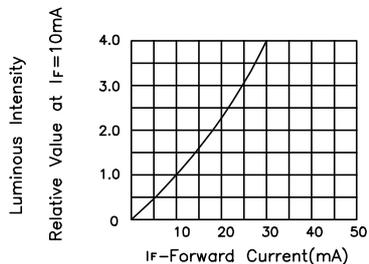
High Efficiency Red KM-23ID, KM23IT, KM-23EC



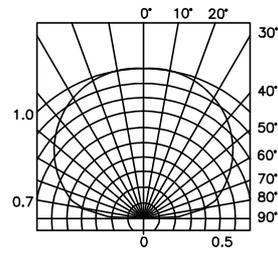
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

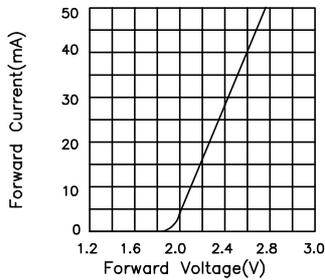


LUMINOUS INTENSITY Vs. FORWARD CURRENT

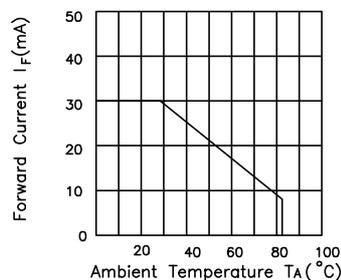


SPATIAL DISTRIBUTION

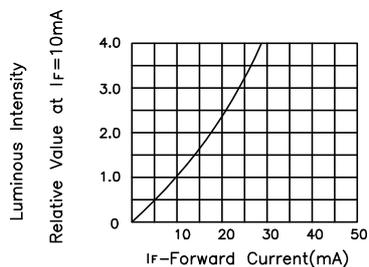
Yellow KM-23YD, KM23YT, KM-23YC



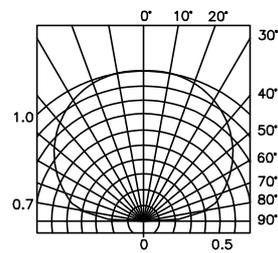
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

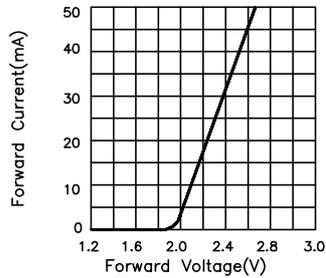


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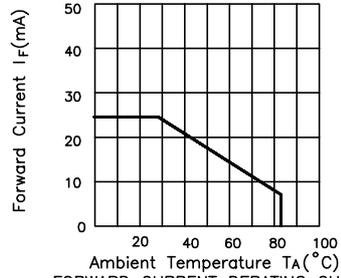


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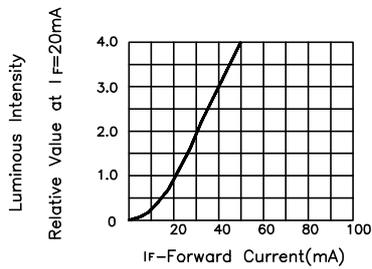
Super Bright Green KM-23SGD, KM-23SGT, KM-23SGC



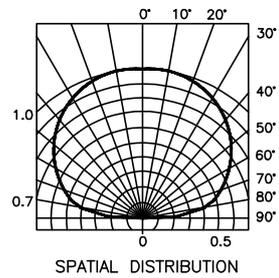
FORWARD CURRENT Vs. FORWARD VOLTAGE



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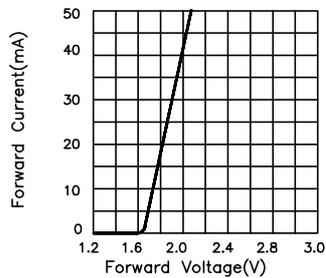


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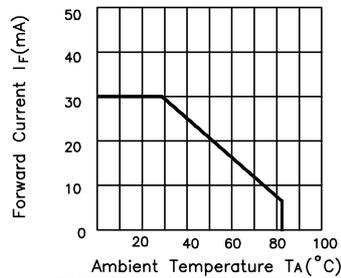


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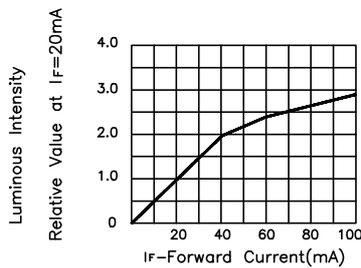
Super Bright Red KM-23SRD, KM-23SRT, KM-23SRC



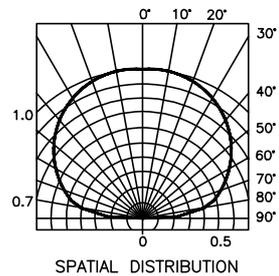
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

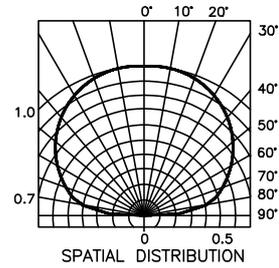
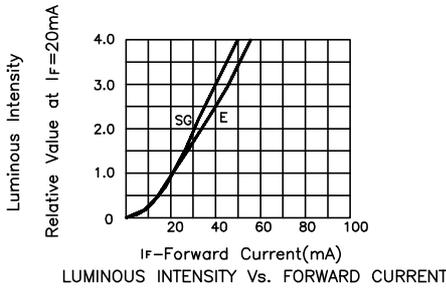
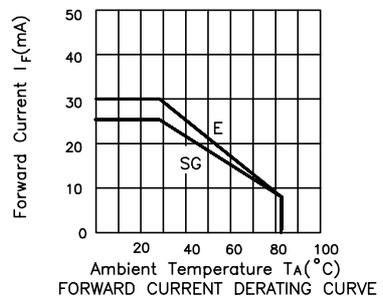
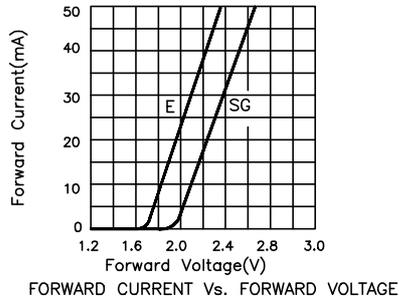


LUMINOUS INTENSITY Vs. FORWARD CURRENT

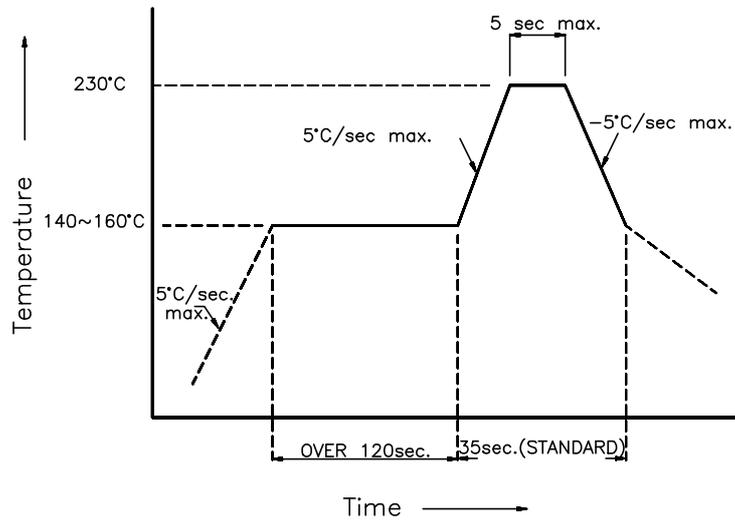


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High Efficiency Red / Super Bright Green KM-23ESGW, KM-23ESGC

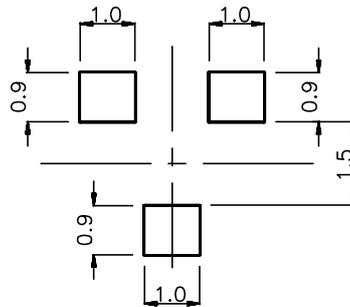


KM-23 Series SMT Reflow Soldering Instructions



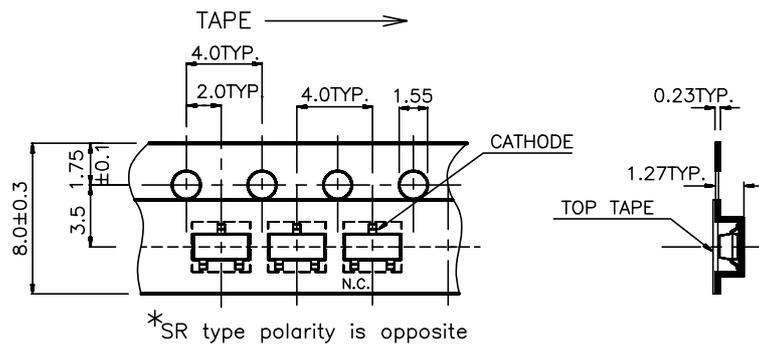
KM-23 Series Recommended Soldering Pattern

FOR REFLOW SOLDERING

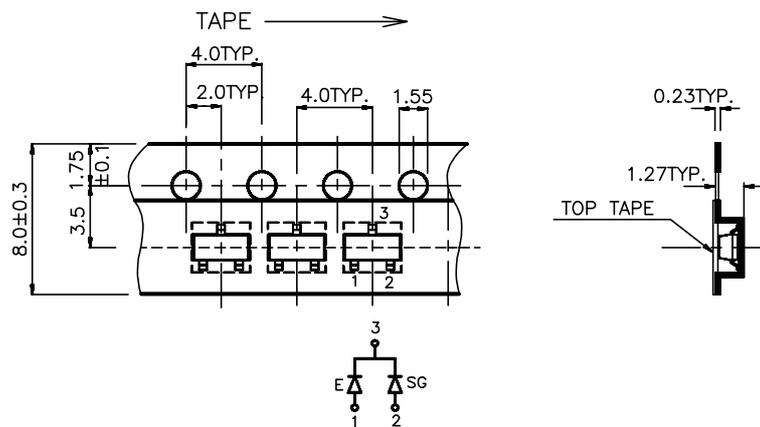


KM-23 Series Tape Specifications

KM-23xxx



KM-23ESGx



(Units : mm)