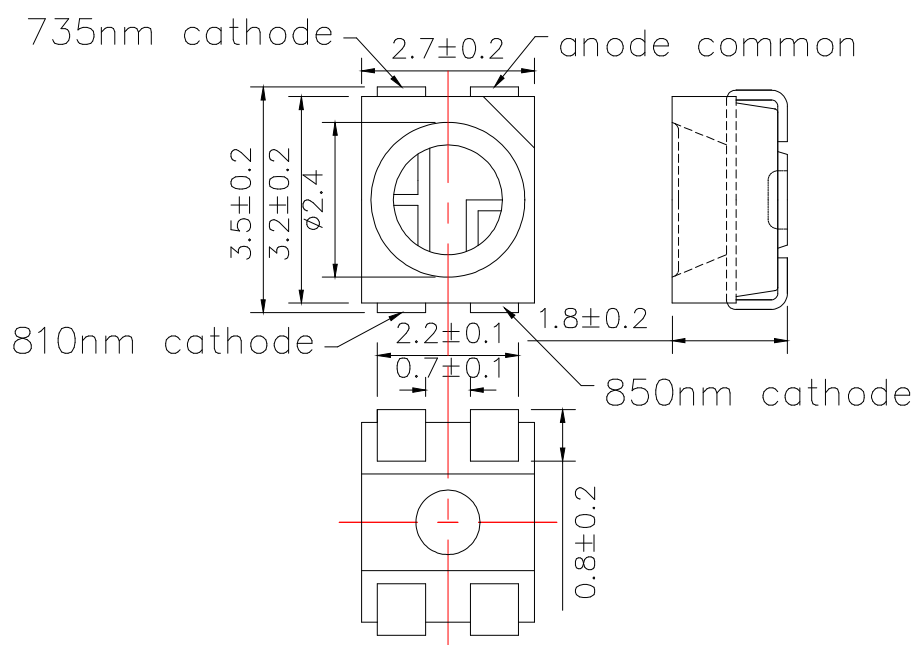


SMT735D/810D/850D

Multi Wavelength LED

Outline and Internal Circuit



(Unit : mm)

Features

- Chip Material : AlGaInP(735nm) , AlGaAs(810nm,850nm)
- Chip Dimension : 350um * 350um
- Number of Chips : 3pcs
- Peak Wavelength : 735 / 810 / 850nm typ.
- Lead Frame Die : Silver Plated
- Package Resin : Polyamide Resin
- Lens : Silicone or Epoxy Resin

SMT735D/810D/850D

735nm

Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	240	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	500	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthjs	80	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C

‡Pulse Forward Current condition : Duty 1% and Pulse Width=10us.

‡Soldering condition : Refer to technical support information on the website.

Optical and Electrical Characteristics (Tc=25°C)

(*: 100% testing, **: reference value)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		2.1	2.4	V	IF=50mA*
	VFP		4.4			IFP=500mA**
Reverse Current	IR			10	uA	VR=5V*
Total Radiated Power	PO	20	30		mW	IF=50mA*
			290			IFP=500mA**
Peak Wavelength	λp	725		745	nm	IF=50mA*
Half Width	Δλ		21		nm	IF=50mA**
Rise Time	tr		50		ns	IF=50mA**
Fall Time	tf		25		ns	IF=50mA**

‡ Radiated Power is measured by S3584-08.

810nm

Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	200	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	500	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthjs	80	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C

‡Pulse Forward Current condition : Duty 1% and Pulse Width=10us.

‡Soldering condition : Refer to technical support information on the website.

Optical and Electrical Characteristics (Tc=25°C)

(*: 100% testing, **: reference value)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		1.6	2.0	V	IF=50mA*
	VFP		2.4			IFP=500mA**
Reverse Current	IR			10	uA	VR=5V*
Total Radiated Power	PO	16	23		mW	IF=50mA*
			220			IFP=500mA**
Peak Wavelength	λp	800		820	nm	IF=50mA*
Half Width	Δλ		20		nm	IF=50mA**
Rise Time	tr		35		ns	IF=50mA**
Fall Time	tf		30		ns	IF=50mA**

‡ Radiated Power is measured by S3584-08.

SMT735D/810D/850D

850nm

Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	200	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	1000	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthjs	80	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C

‡Pulse Forward Current condition : Duty 1% and Pulse Width=10us.

‡Soldering condition : Refer to technical support information on the website.

Optical and Electrical Characteristics (Tc=25°C)

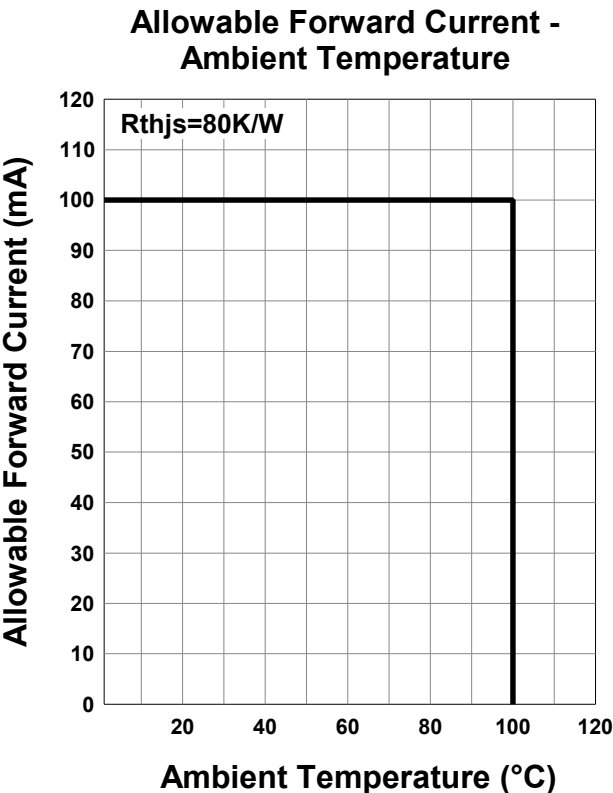
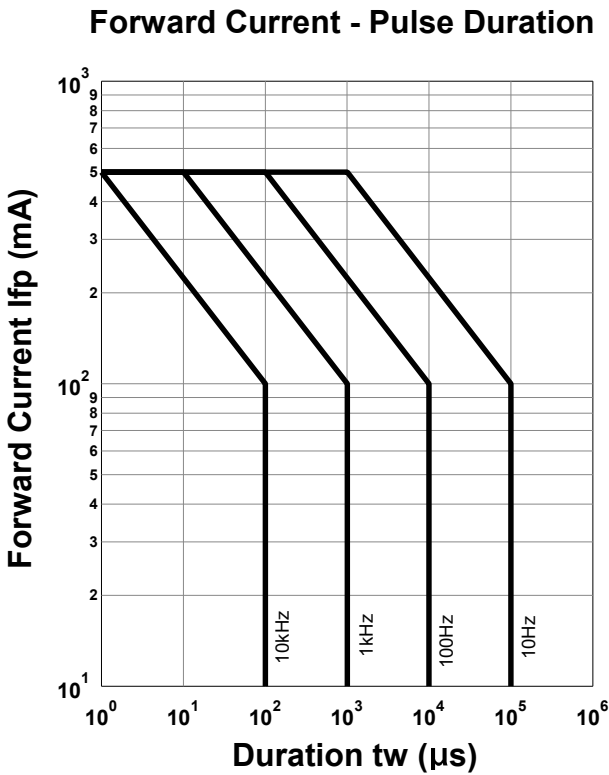
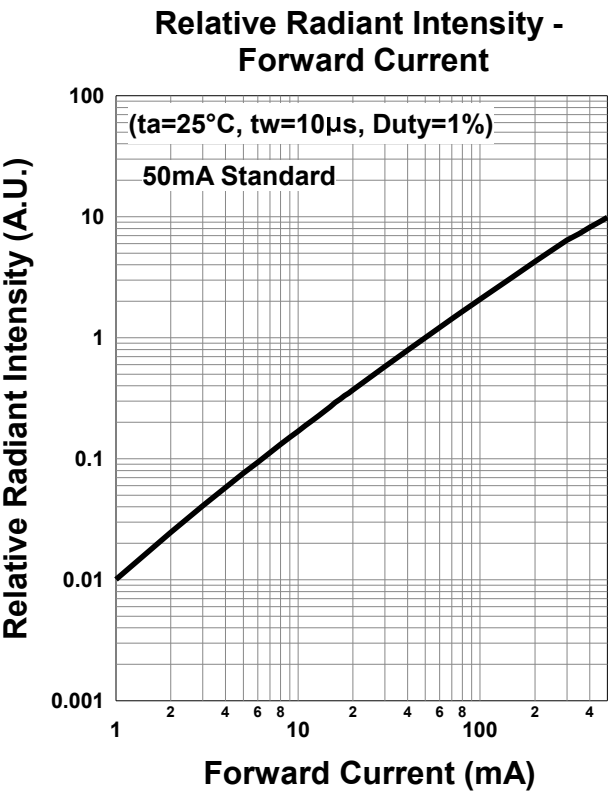
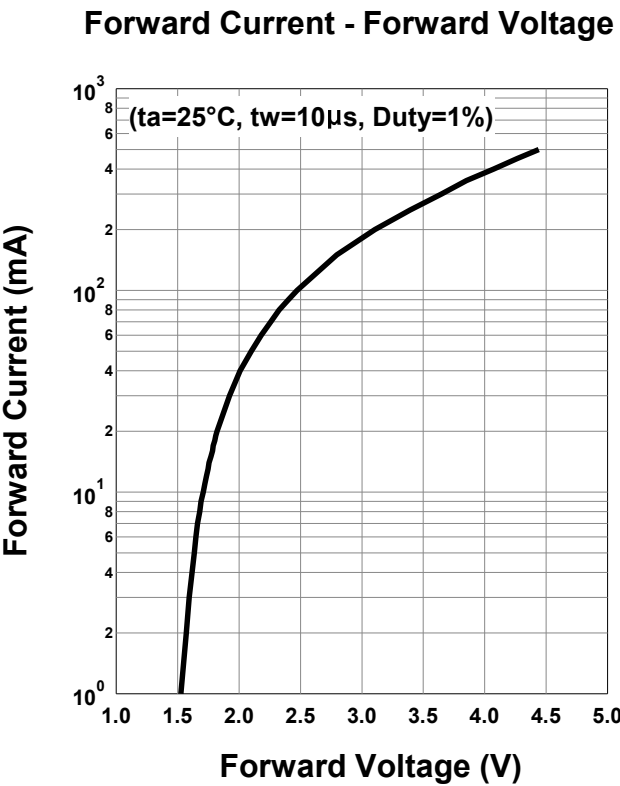
(*: 100% testing, **: reference value)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		1.5	2.0	V	IF=50mA*
	VFP		2.7			IFP=1A**
Reverse Current	IR			10	uA	VR=5V*
Total Radiated Power	PO	16	23		mW	IF=50mA*
			400			IFP=1A**
Peak Wavelength	λp	840		865	nm	IF=50mA*
Half Width	Δλ		32		nm	IF=50mA**
Rise Time	tr		10		ns	IF=50mA**
Fall Time	tf		10		ns	IF=50mA**

‡ Radiated Power is measured by S3584-08.

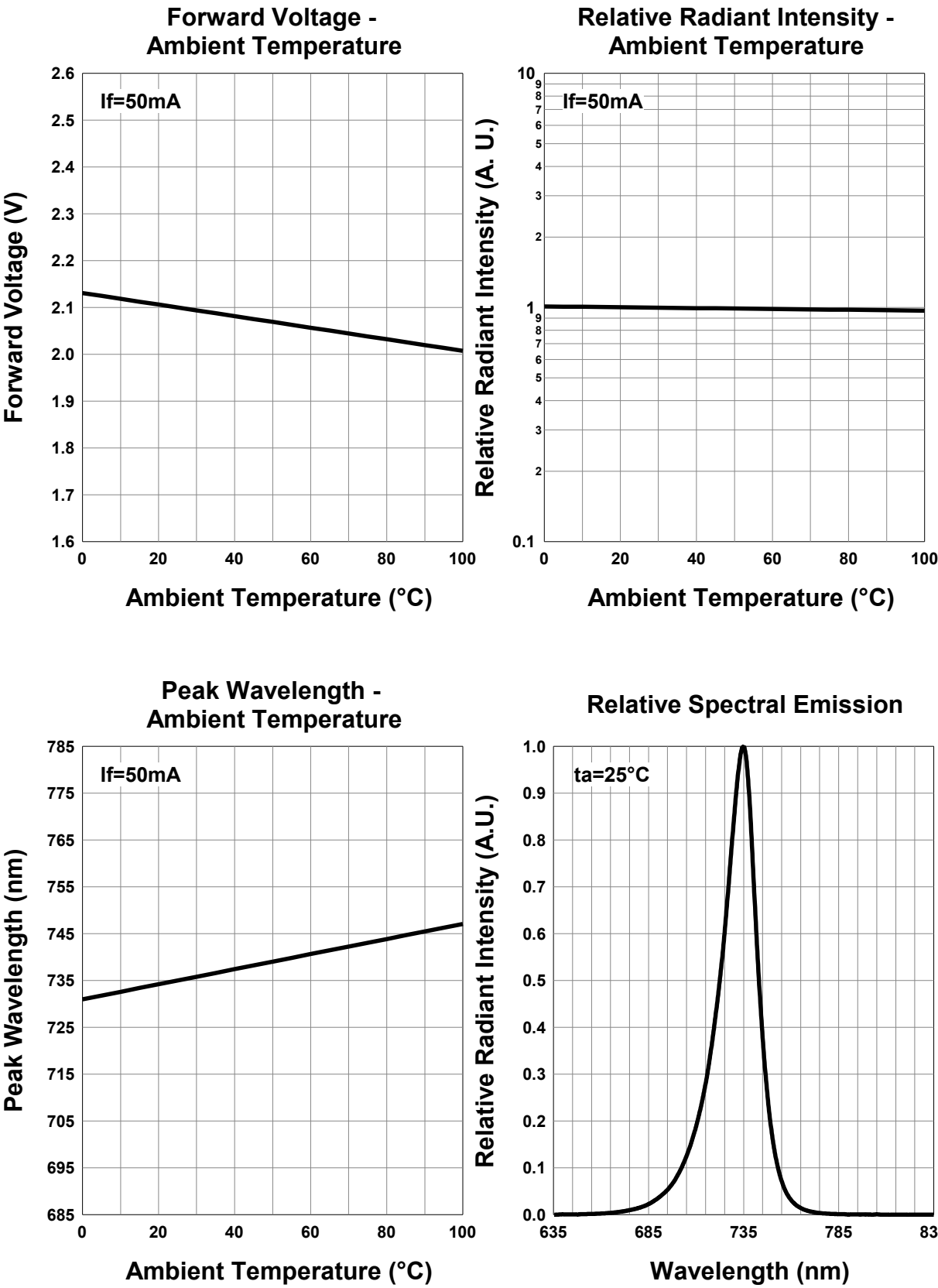
SMT735D/810D/850D

Typical Characteristic Curves
735nm



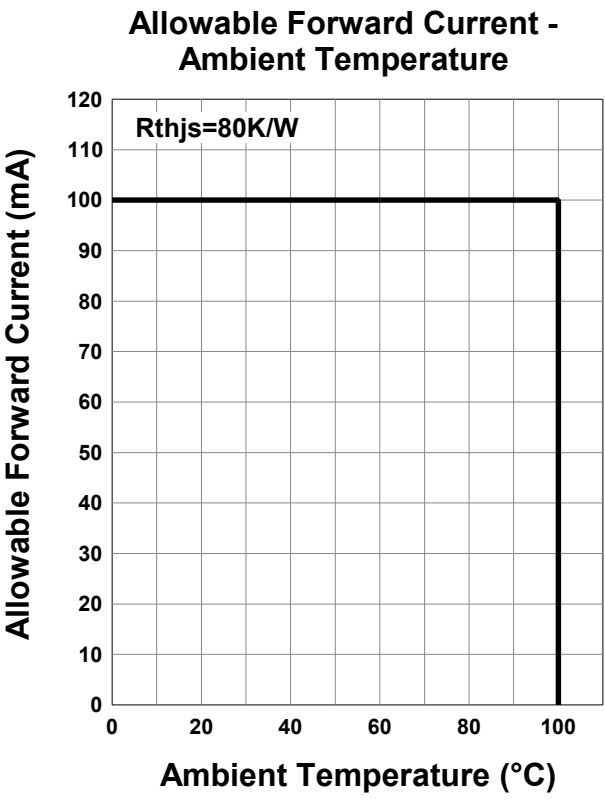
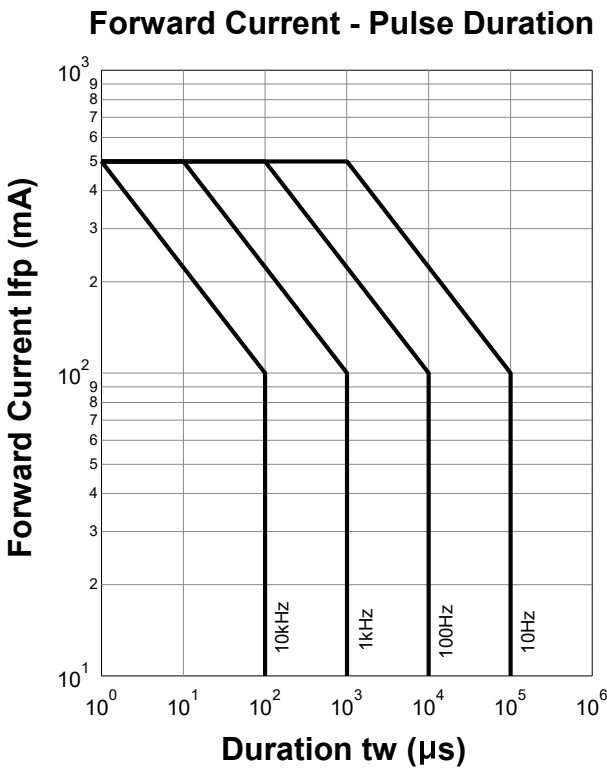
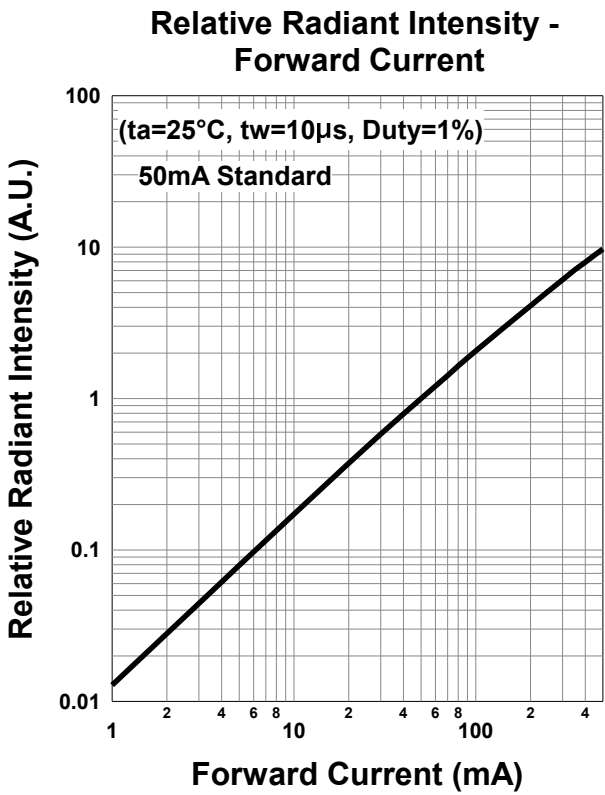
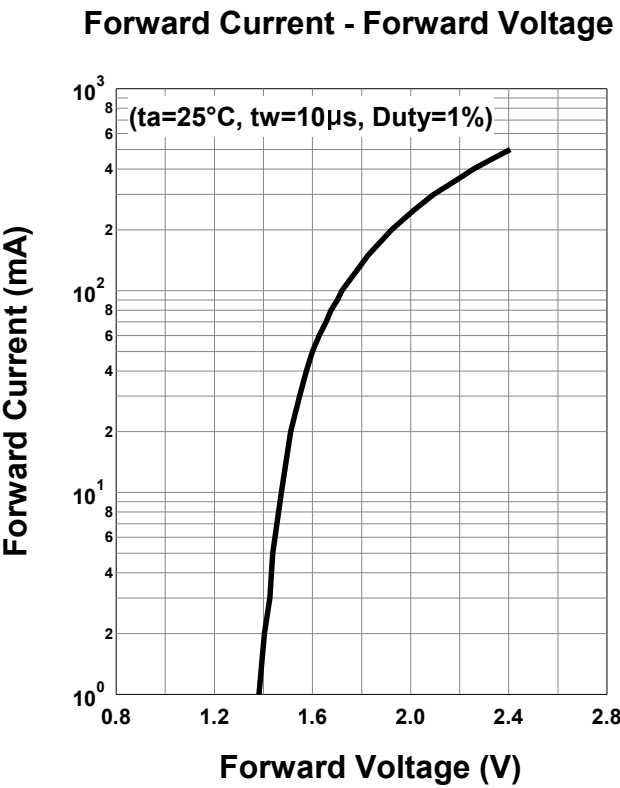
SMT735D/810D/850D

735nm



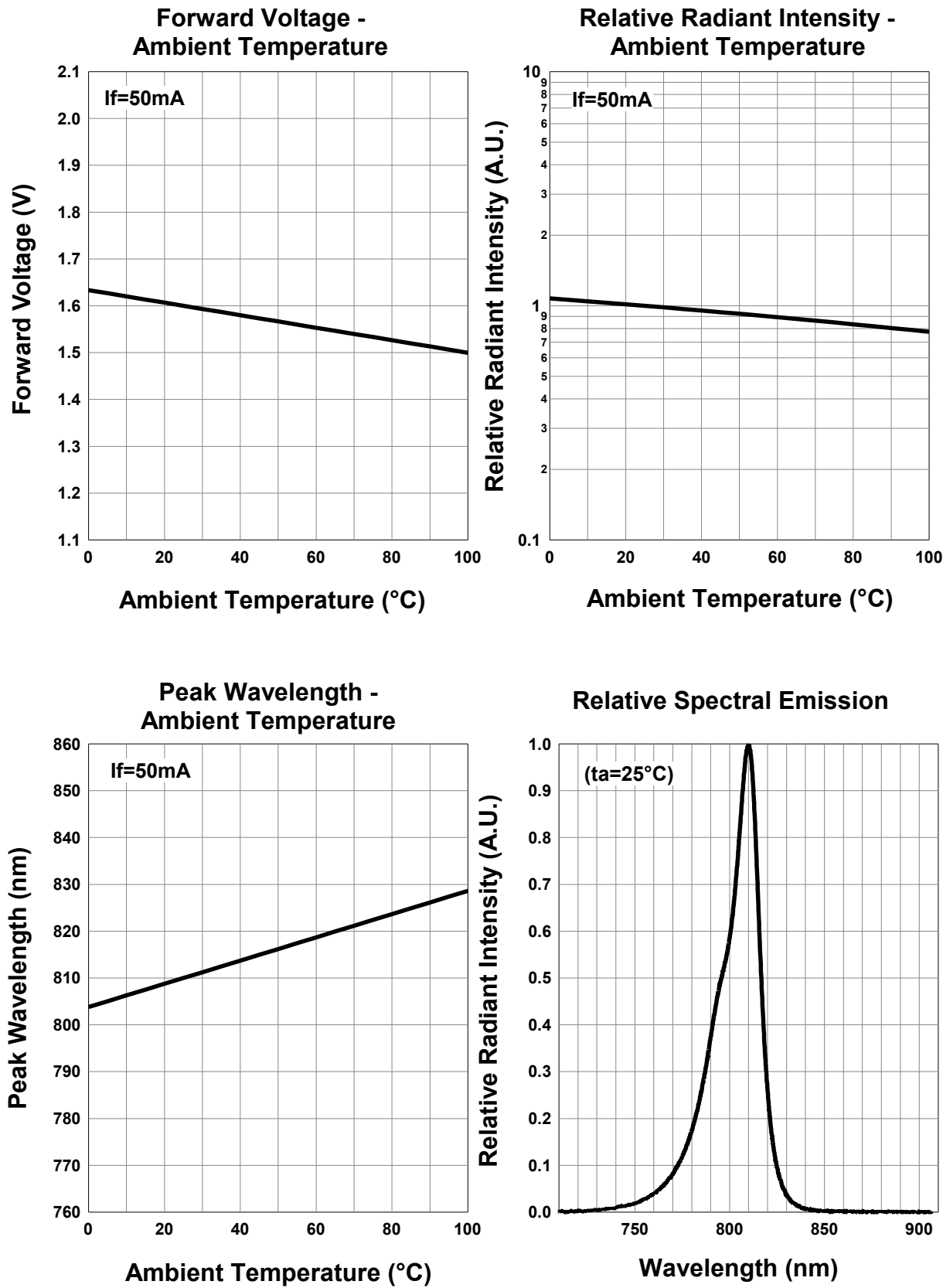
SMT735D/810D/850D

Typical Characteristic Curves
810nm



SMT735D/810D/850D

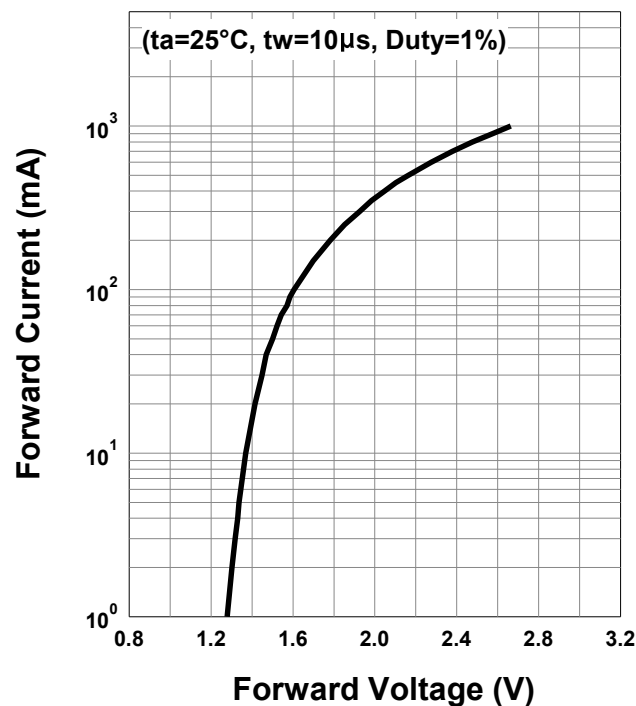
810nm



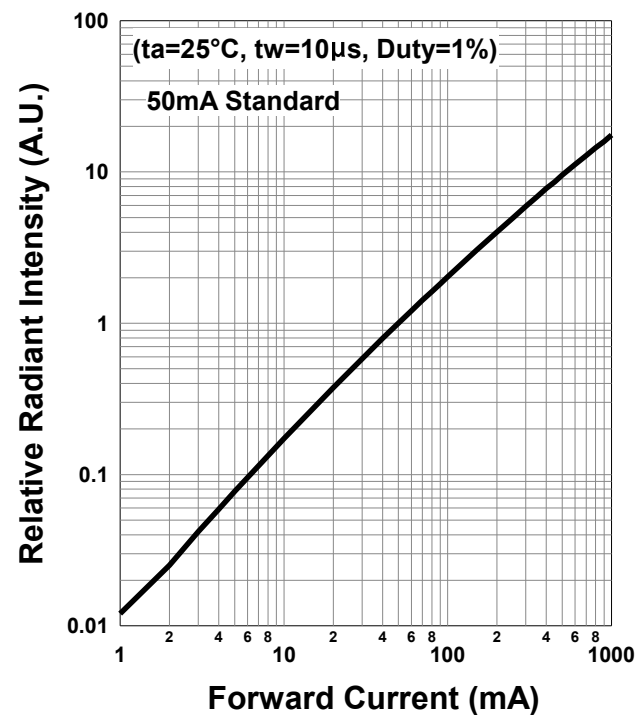
SMT735D/810D/850D

Typical Characteristic Curves
850nm

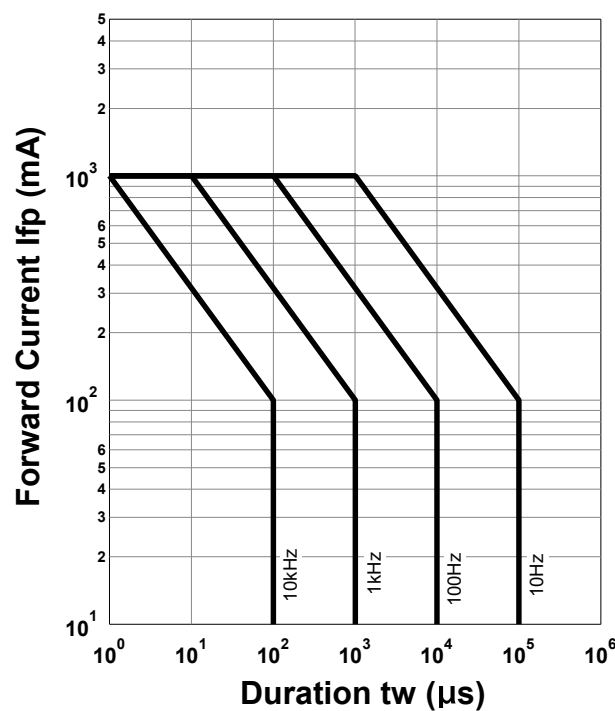
Forward Current - Forward Voltage



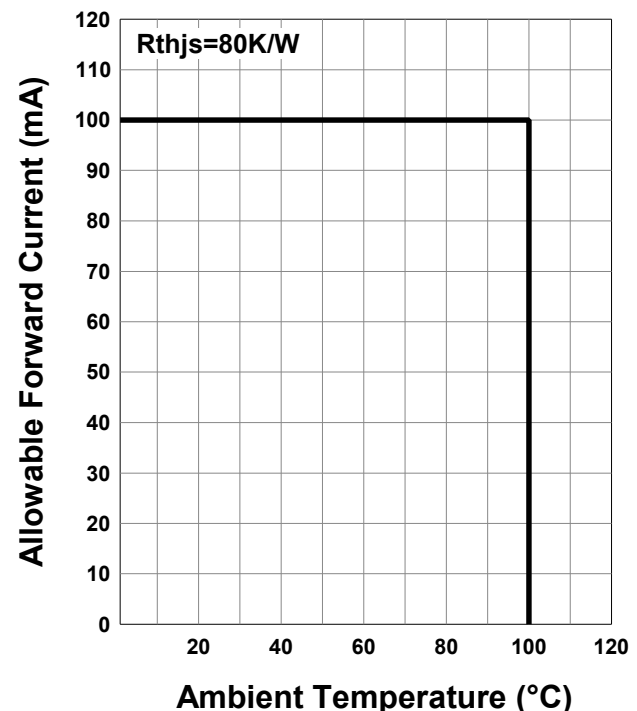
Relative Radiant Intensity - Forward Current



Forward Current - Pulse Duration

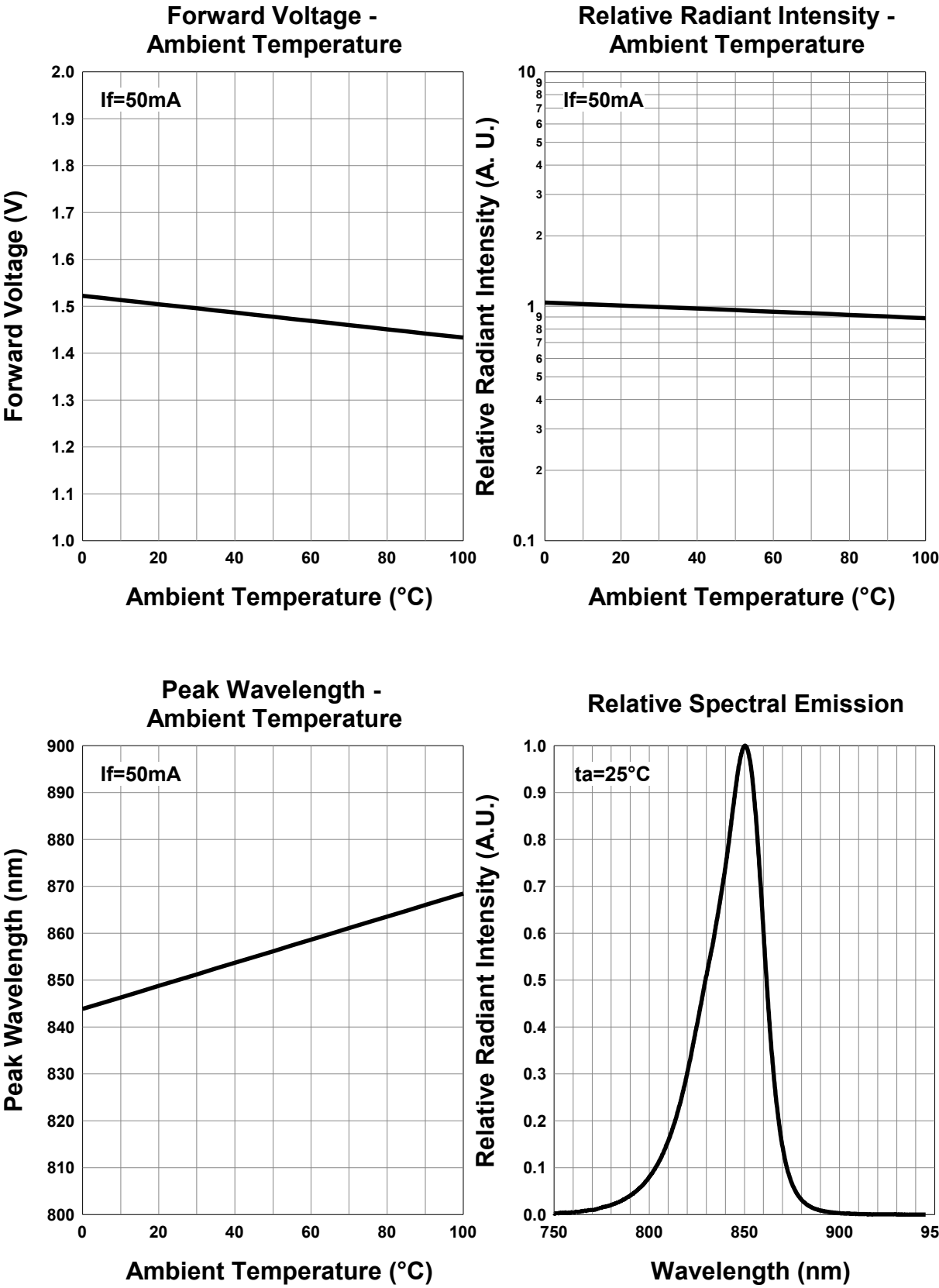


Allowable Forward Current - Ambient Temperature



SMT735D/810D/850D

850nm



Wrapping

Moisture barrier bag aluminum laminated film with a desiccant to keep out the moisture absorption during the transportation and storage.

SMD LED storage and handling precautions

Storage Conditions before Opening a Moisture-Barrier Aluminum Bag

- Before opening a moisture-barrier aluminum bag, please store it at <30°C, <60%RH.
- Please note that the maximum shelf life is 12 months under these conditions.

Storage Conditions after Opening a Moisture-Barrier Aluminum Bag

- After opening a moisture-barrier aluminum bag, store the aluminum bag and silica gel in a desiccator.
- After opening the bag, please solder the LEDs within 72 hours in a room with 5 - 30°C, <50%RH.
- Please put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.
- The 72-hour- long floor life does not include the time while LEDs are stored in the moisture-barrier aluminum bag. However, we strongly recommend to solder the LEDs as soon as possible after opening the aluminum bag.

Notes about Re-sealing a Moisture-Barrier Aluminum Bag

- When vacuum-sealing an opened aluminum bag, if you find the moisture-indicator of the silica gel has changed to pink from blue (indicating a relative humidity of 30 % or more), please do not use the unused LEDs, the aluminum bag, or the silica gel.

Notes about Opening a Re-sealed Moisture-Barrier Aluminum Bag

- When opening a vacuumed and re-sealed aluminum bag in order to use the remaining LEDs stored in the bag, if you find that the moisture-indicator of the silica has changed to pink, please do not use the LEDs.

SMT735D/810D/850D

Disclaimer

Product specifications and data shown in this product catalog are subject to change without notice for the purposes of improving product performance, reliability, design, or otherwise.

Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements.

Product data and parameters may vary by user application and over time.

Products shown in this catalog are intended to be used for general electronic equipment. Products are not guaranteed for applications where product malfunction or failure may cause personal injury or death, including but not limited to life-supporting / saving devices, medical devices, safety devices, airplanes, aerospace equipment, automobiles, traffic control systems, and nuclear reactor control systems.

Technical Support Information

The product is manufactured by USHIO Inc. and the spec information is also from USHIO Inc.

