DOWA®

DoUVLEDs

DOWA SUPERB UV LED SOLUTIONS

MODEL xFxVL-1F111 series

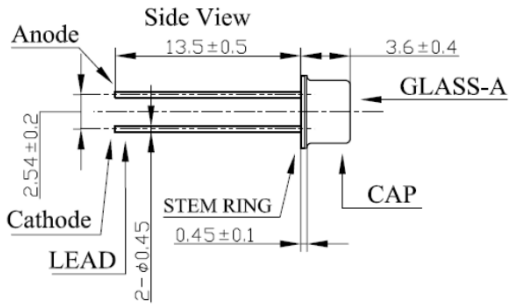
TO18 Flat Can Type

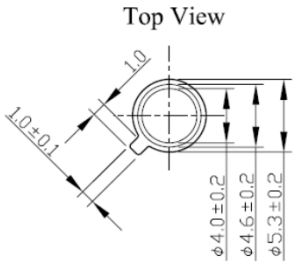
RoHS

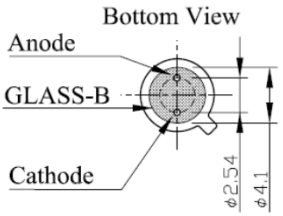
Mechanical Specifications and Materials (Unit: mm)

Product ID

265nm: DF7VL-1F111
280nm: DF8VL-1F111
310nm: UF1VL-1F111
325nm: UF3VL-1F111
340nm: UF4VL-1F111







	ITEM	MATERIALS
1	GLASS-A	UV-GLASS
2	CAP	KOVAR, Ni Plating
3	STEM RING	KOVAR, Au Plating
4	GLASS-B	Hard Glass (Black)
5	LEAD	KOVAR, Au Plating

Typical Optical-Electrical Characteristics (I_F=20mA, T_a=25℃)

Item		Symbol	Unit	DF7VL	DF8VL	UF1VL	UF3VL	UF4VL
Peak Wavelength		λ_p	nm	265±5	280±10	310±5	325±5	340±5
Radiant Flux		P_o	mW	0.7	1.3	0.7	1.1	1.1
Full Width at Half Maximum		$\Delta\lambda$	nm	13	12	15	11	9
Forward Voltage		V_F	V	8-9	6.5	6-7	4.5	4.0
Response*	rise time	tr	ns	-	-	16	20	12
	fall time	tf	ns	-	-	8	9	8
Viewing Half Angle		$2\theta_{1/2}$	deg.	113	113	113	113	113

*Test condition : Frequency=100kHz, duty=1%, I_{fp}=200mA

Absolute Maximum Ratings

Item	Symbol	Unit		
Forward Current	I_{Fmax}	mA	40	T_a=25℃
Operating Temperature	T_{OPR}	℃	-30 ～ +80	
Storage Temperature	T_{STG}	℃	-40 ～ +100	
Soldering Temperature	T_{SOL}	℃	350 (within 3sec)	Manual soldering process
			250 (within 5sec)	Flow soldering process

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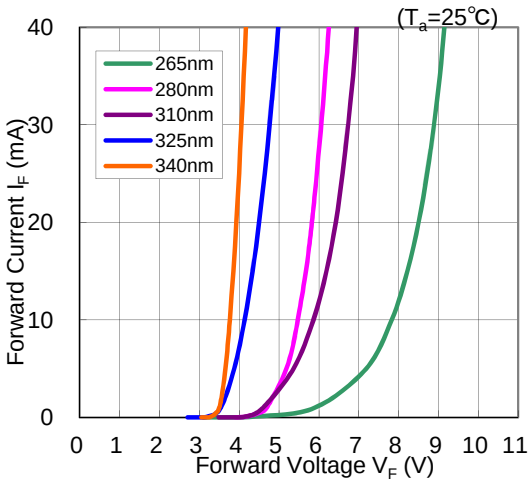
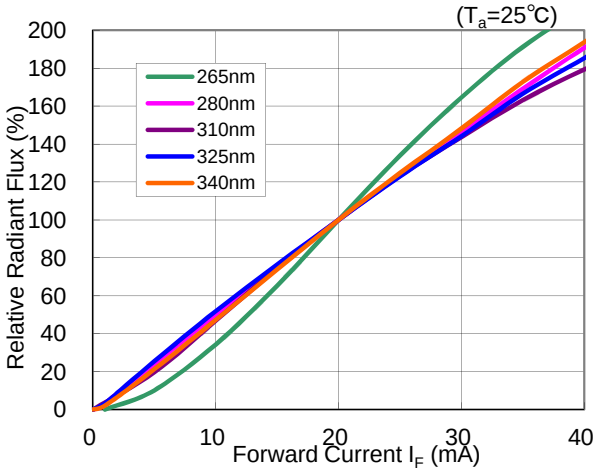
DoUVLEDs

DOWA SUPERB UV LED SOLUTIONS

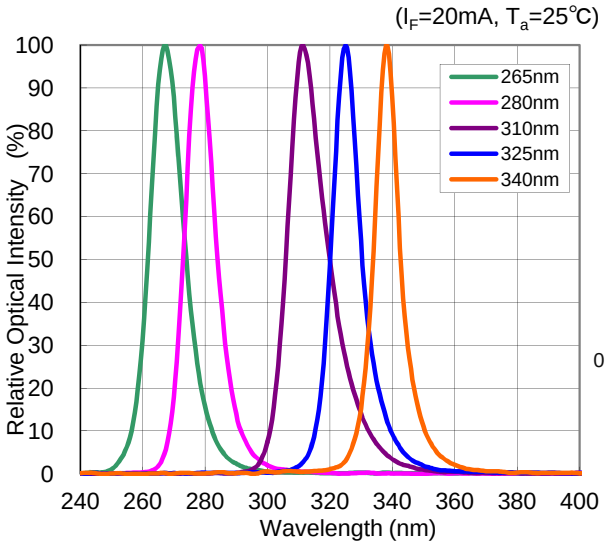
Forward Voltage vs Forward Current



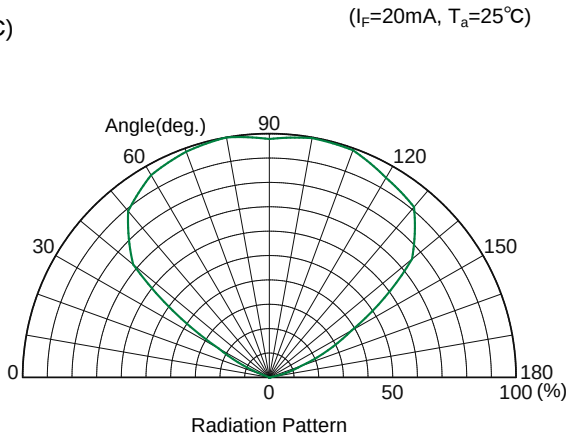
Forward Current vs Radiant Flux



Peak Wavelength vs Relavive Intensity



Radiation Pattern



WARNING

- **LEDs emit very strong UV radiation.**
- **Don't look directly into the LED light.**
  UV radiation can harm your eyes.
- **To prevent even inadequate exposure, wear protective eyewear.**
- **If LEDs are embedded in devices, please indicate warning labels against the UV light LED used.**
- **Keep out of reach of children.**
- **Specification and dimension are subject to change for improvement without notice.**

SPEC informaition (included design, dimension, and typical data) would be changed without prior notice.

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DOWA ELECTRONICS MATERIALS CO.,LTD.

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DoUVLEDs

DOWA SUPERB UV LED SOLUTIONS

MODEL xFxVL-1H211 series

TO18 Hemispherical Can Type

RoHS

Mechanical Specifications and Materials (Unit: mm)

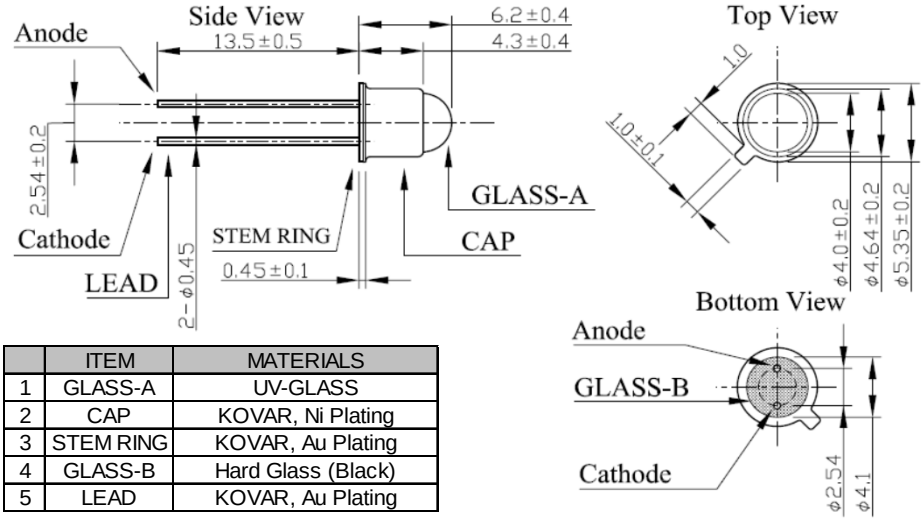
Product ID

280nm: DF8VL-1H211

310nm: UF1VL-1H211

325nm: UF3VL-1H211

340nm: UF4VL-1H211



	ITEM	MATERIALS
1	GLASS-A	UV-GLASS
2	CAP	KOVAR, Ni Plating
3	STEM RING	KOVAR, Au Plating
4	GLASS-B	Hard Glass (Black)
5	LEAD	KOVAR, Au Plating

Typical Optical-Electrical Characteristics (I_F=20mA, T_a=25℃)

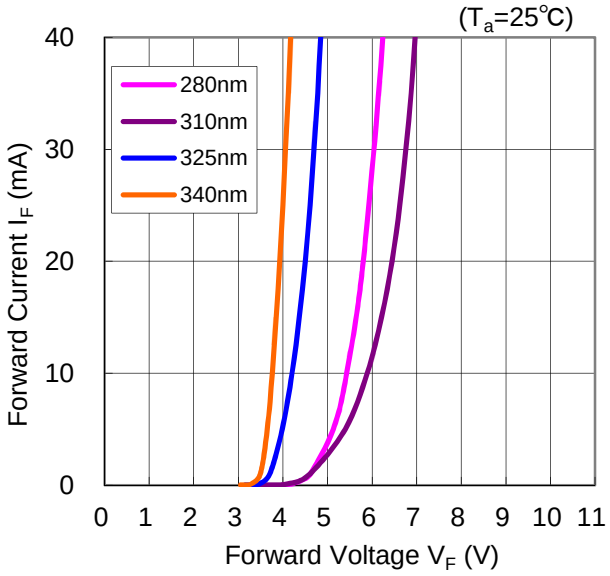
Item		Symbol	Unit	DF8VL	UF1VL	UF3VL	UF4VL
Peak Wavelength		λ_p	nm	280±10	310±5	325±5	340±5
Radiant Flux		P_o	mW	1.3	0.6	1.1	1.1
Full Width at Half Maximum		$\Delta\lambda$	nm	12	15	11	9
Forward Voltage		V_F	V	6.5	6-7	4.5	4.0
Response*	rise time	tr	ns	-	16	20	12
	fall time	tf	ns	-	8	9	8
Viewing Half Angle		$2\theta_{1/2}$	deg.	24	24	24	24

*Test condition : Frequency=100kHz, duty=1%, I_{fp}=200mA

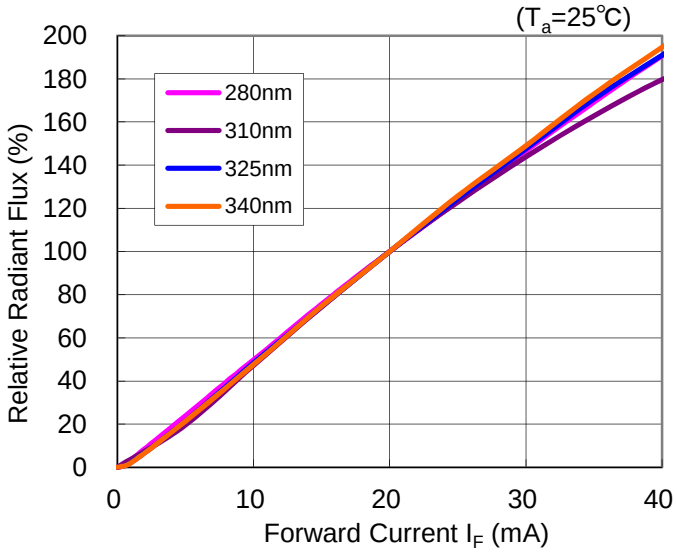
Absolute Maximum Ratings

Item	Symbol	Unit		
Forward Current	I_{Fmax}	mA	40	T_a=25℃
Operating Temperature	T_{OPR}	℃	-30 ～ +80	
Storage Temperature	T_{STG}	℃	-40 ～ +100	
Soldering Temperature	T_{SOL}	℃	350 (within 3sec)	Manual soldering process
			250 (within 5sec)	Flow soldering process

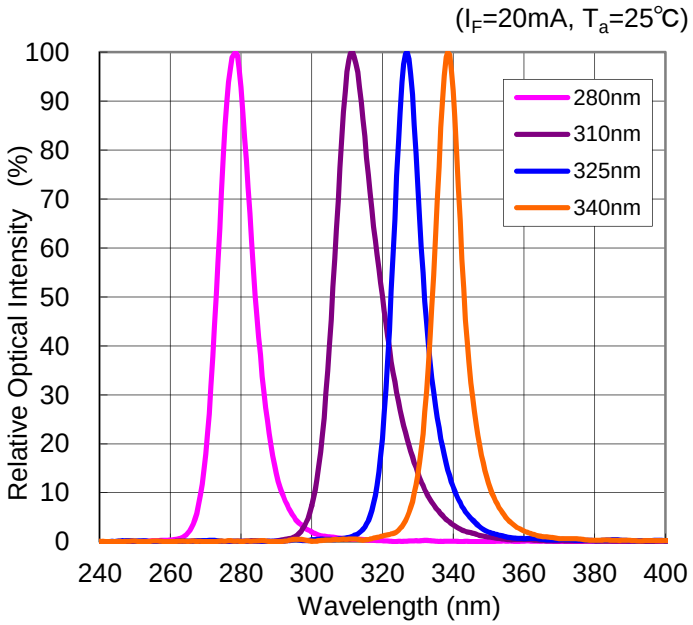
Forward Voltage vs Forward Current



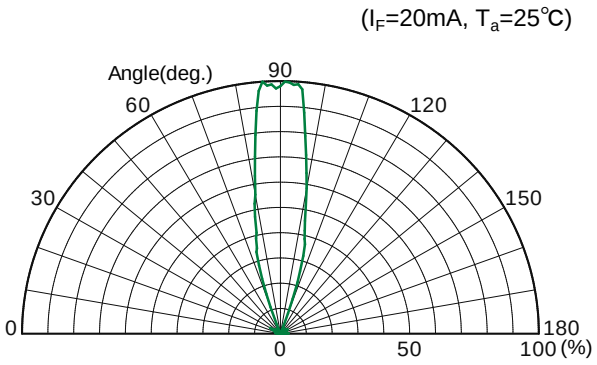
Forward Current vs Radiant Flux



Peak Wavelength vs Relavive Intensity



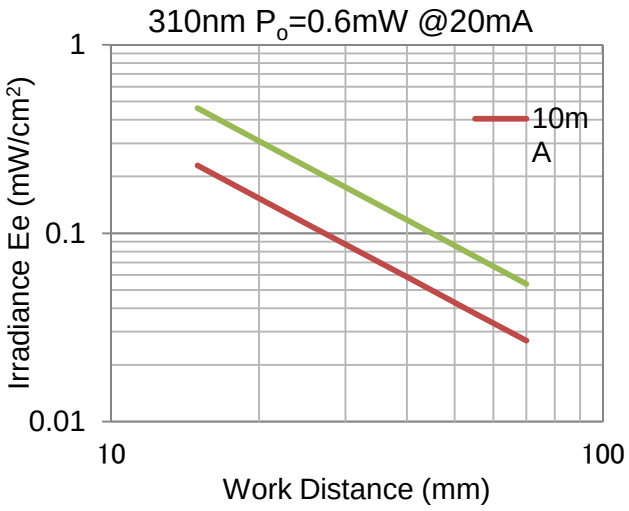
Radiation Pattern

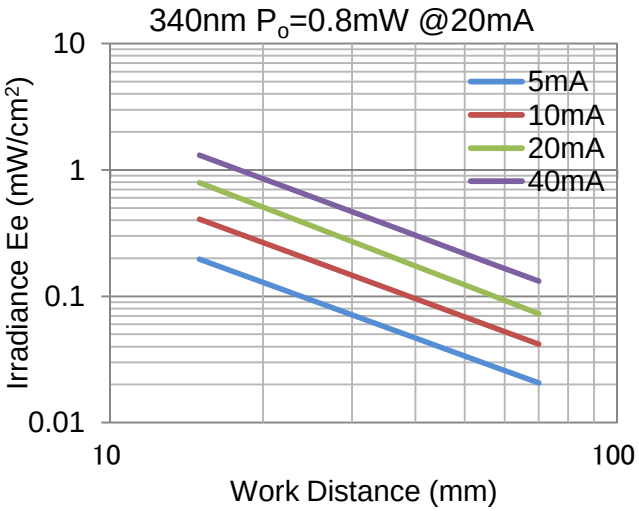


⚠ WARNING

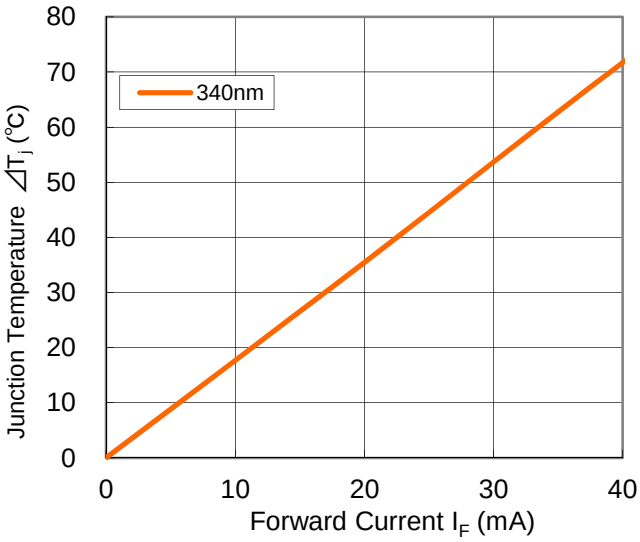
- LEDs emit very strong UV radiation.
- Don't look directly into the LED light.
  UV radiation can harm your eyes.
- To prevent even inadequate exposure, wear protective eyewear.
- If LEDs are embedded in devices, please indicate warning labels against the UV light LED used.
- Keep out of reach of children.
- Specification and dimension are subject to change for improvement without notice.

Irradiance vs Work Distance





Forward Current vs Junction Temperature



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DOWA ELECTRONICS MATERIALS CO.,LTD.

DOWA®

DoUVLEDs

DOWA SUPERB UV LED SOLUTIONS

MODEL xFxVL-1H411 series

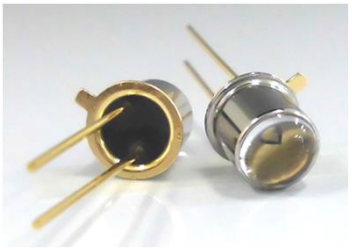
TO18 Hemispherical Can Type

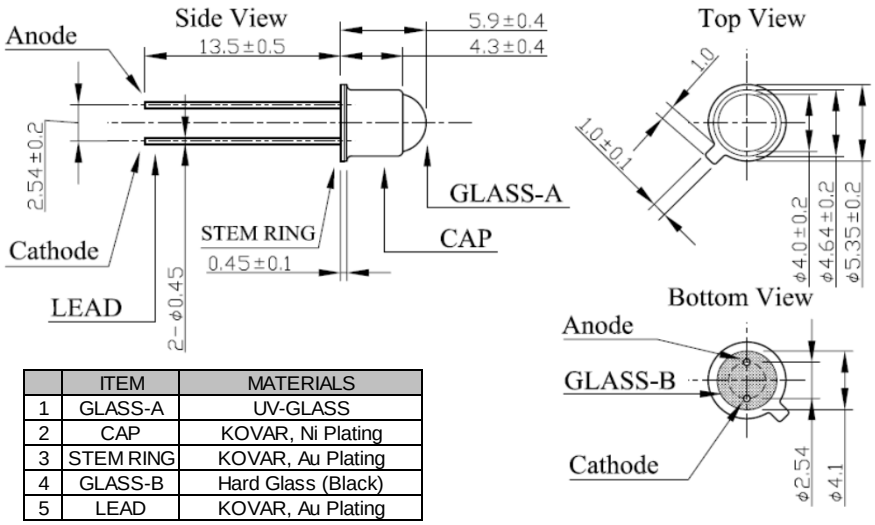
RoHS

Mechanical Specifications and Materials (Unit: mm)

Product ID

265nm: DF7VL-1H411
280nm: DF8VL-1H411
310nm: UF1VL-1H411
325nm: UF3VL-1H411
340nm: UF4VL-1H411





	ITEM	MATERIALS
1	GLASS-A	UV-GLASS
2	CAP	KOVAR, Ni Plating
3	STEM RING	KOVAR, Au Plating
4	GLASS-B	Hard Glass (Black)
5	LEAD	KOVAR, Au Plating

Typical Optical-Electrical Characteristics (I_F=20mA, T_a=25℃)

Item		Symbol	Unit	DF7VL	DF8VL	UF1VL	UF3VL	UF4VL
Peak Wavelength		λ_p	nm	265±5	280±10	310±5	325±5	340±5
Radiant Flux		P_o	mW	0.7	1.1	0.6	0.9	1.1
Full Width at Half Maximum		$\Delta\lambda$	nm	13	12	15	11	9
Forward Voltage		V_F	V	8-9	6.5	6-7	4.5	4.0
Response*	rise time	tr	ns	-	-	16	20	12
	fall time	tf	ns	-	-	8	9	8
Viewing Half Angle		$2\theta_{1/2}$	deg.	40	40	40	40	40

*Test condition : Frequency=100kHz, duty=1%, I_{fp}=200mA

Absolute Maximum Ratings

Item	Symbol	Unit		Ambient Temperature
Forward Current	I_{Fmax}	mA	40	T_a=25℃
Operating Temperature	T_{OPR}	℃	-30 ～ +80	
Storage Temperature	T_{STG}	℃	-40 ～ +100	
Soldering Temperature	T_{SOL}	℃	350 (within 3sec)	Manual soldering process
			250 (within 5sec)	Flow soldering process

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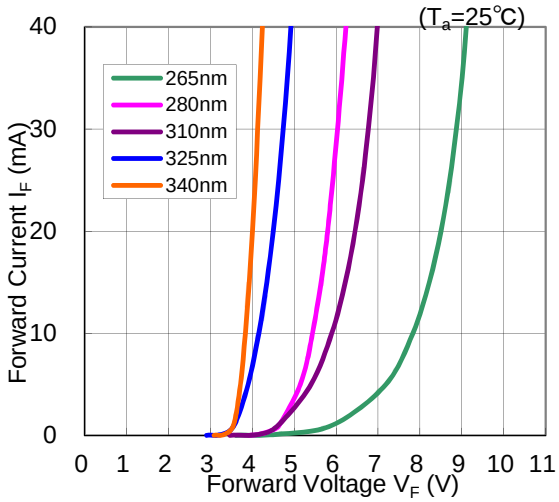
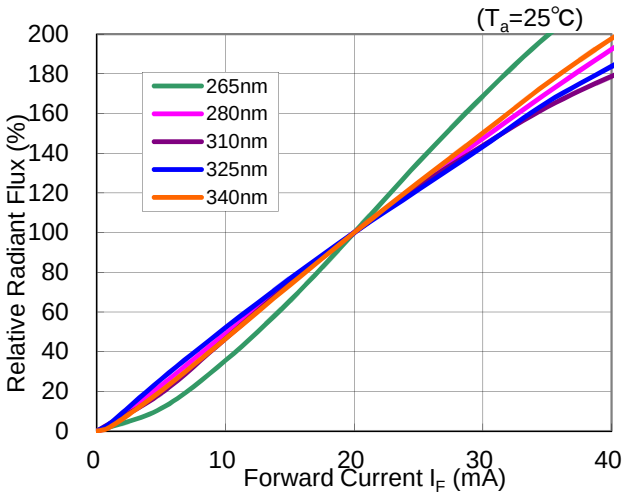
DOWA SUPERB UV LED SOLUTIONS

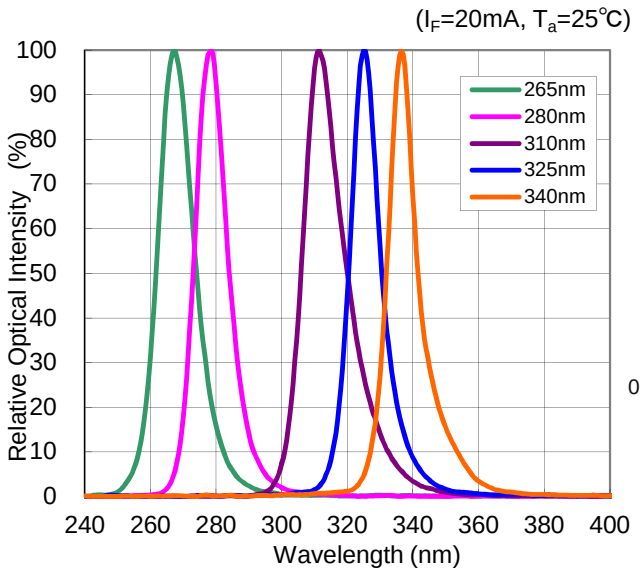
Forward Voltage vs Forward Current



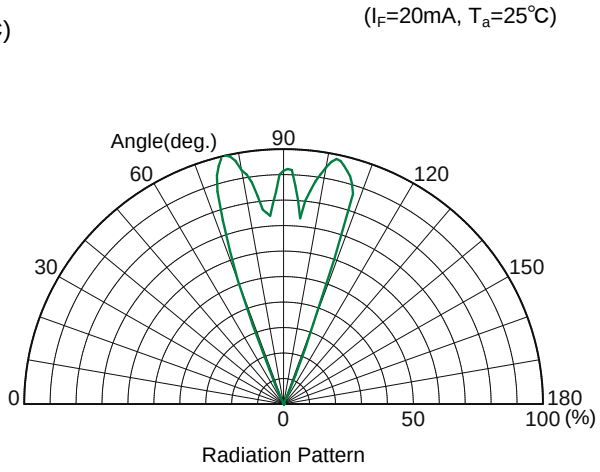
Forward Current vs Radiant Flux



Peak Wavelength vs Relavive Intensity



Radiation Pattern



⚠ WARNING

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- **Specification and dimension are subject to change for improvement without notice.**

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DOWA ELECTRONICS MATERIALS CO.,LTD.

DOWA ®　　DoUVLEDs

DOWA SUPERB UV LED SOLUTIONS

MODEL xFxVL-1H321 series

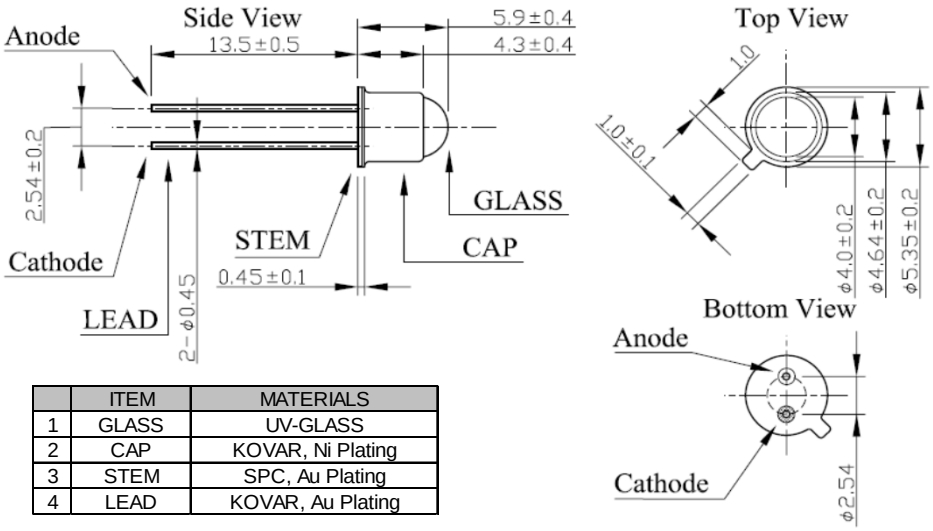
TO46S Hemispherical Can Type

RoHS

Mechanical Specifications and Materials (Unit: mm)

Product ID

265nm: DF7VL-1H321
280nm: DF8VL-1H321
310nm: UF1VL-1H321
325nm: UF3VL-1H321
340nm: UF4VL-1H321



	ITEM	MATERIALS
1	GLASS	UV-GLASS
2	CAP	KOVAR, Ni Plating
3	STEM	SPC, Au Plating
4	LEAD	KOVAR, Au Plating

Typical Optical-Electrical Characteristics (I_F=20mA, T_a=25℃)

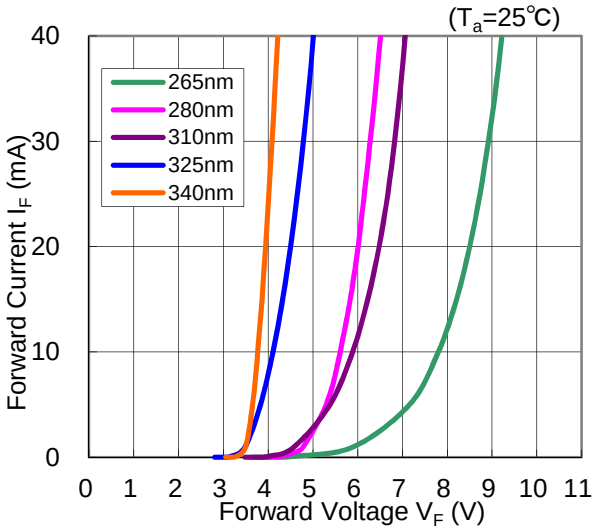
Item		Symbol	Unit	DF7VL	DF8VL	UF1VL	UF3VL	UF4VL
Peak Wavelength		ə$_p$	nm	265±5	280±10	310±5	325±5	340±5
Radiant Flux		P_o	mW	0.5	1.0	0.4	0.7	0.8
Full Width at Half Maximum		⊿ə	nm	13	12	15	11	9
Forward Voltage		V_F	V	8-9	6.5	6-7	4.5	4.0
Response*	rise time	tr	ns	-	-	16	20	12
	fall time	tf	ns	-	-	8	9	8
Viewing Half Angle		$2\theta_{1/2}$	deg.	6	6	6	6	6

*Test condition : Frequency=100kHz, duty=1%, I_{fp}=200mA

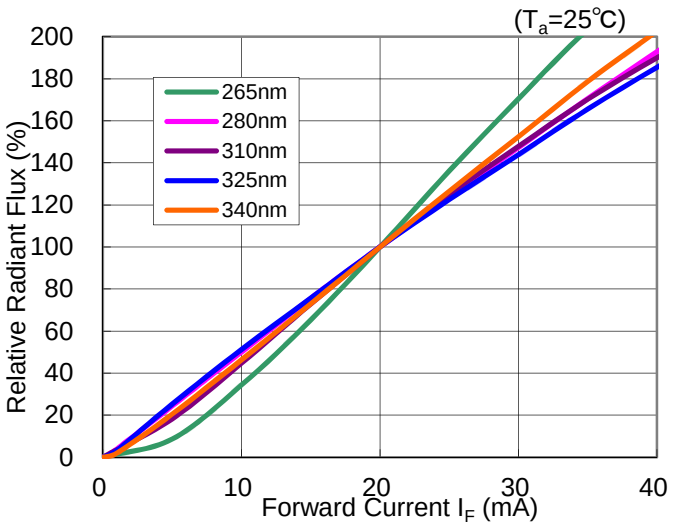
Absolute Maximum Ratings

Item	Symbol	Unit		
Forward Current	I_{Fmax}	mA	40	T_a=25℃
Operating Temperature	T_{OPR}	℃	-30 ～ +80	
Storage Temperature	T_{STG}	℃	-40 ～ +100	
Soldering Temperature	T_{SOL}	℃	350 (within 3sec)	Manual soldering process
			250 (within 5sec)	Flow soldering process

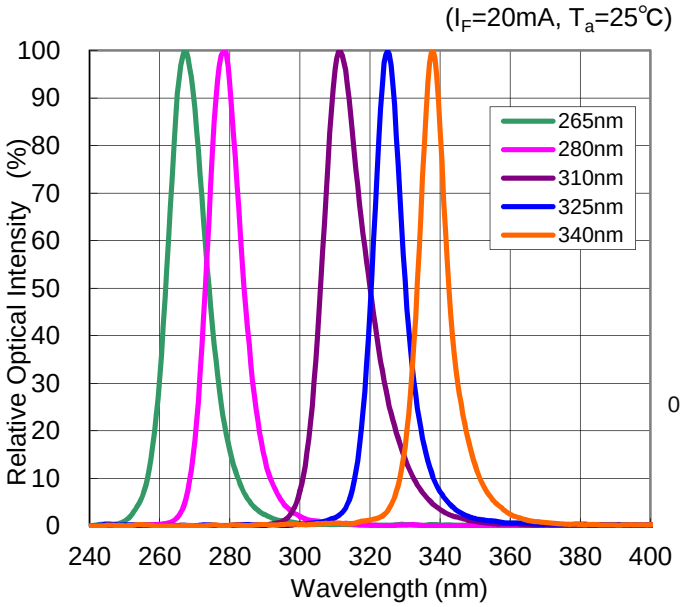
Forward Voltage vs Forward Current



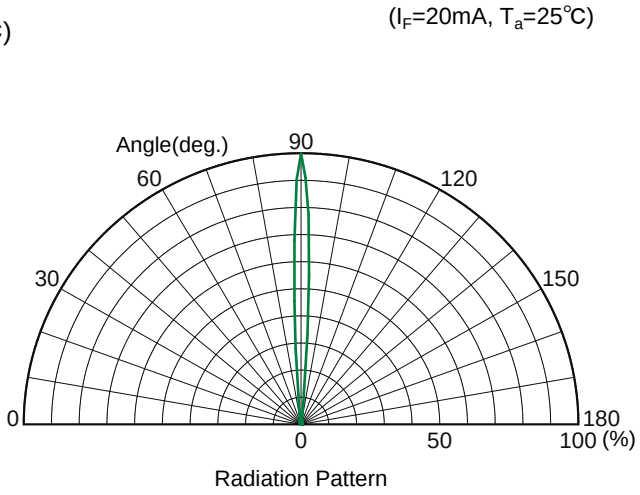
Forward Current vs Radiant Flux



Peak Wavelength vs Relavive Intensity



Radiation Pattern



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DOWA ELECTRONICS MATERIALS CO.,LTD.

DOWA®

DoUVLEDs

DOWA SUPERB UV LED SOLUTIONS

MODEL xFxVL-1F131 series

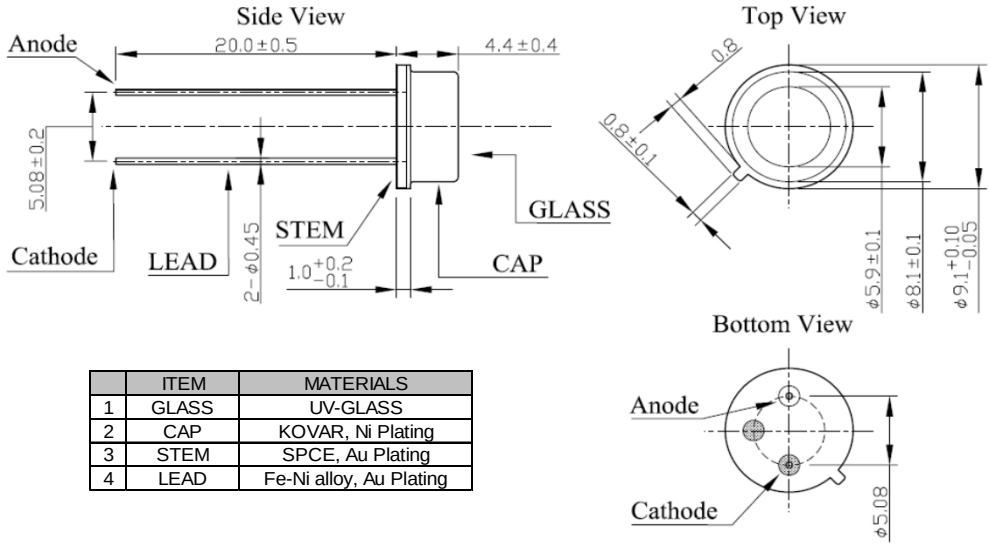
TO5 Flat Can Type

RoHS

Mechanical Specifications and Materials (Unit: mm)

Product ID

265nm: DF7VL-1F131
280nm: DF8VL-1F131
310nm: UF1VL-1F131
325nm: UF3VL-1F131
340nm: UF4VL-1F131



	ITEM	MATERIALS
1	GLASS	UV-GLASS
2	CAP	KOVAR, Ni Plating
3	STEM	SPCE, Au Plating
4	LEAD	Fe-Ni alloy, Au Plating

Typical Optical-Electrical Characteristics (I_F=20mA, T_a=25℃)

Item		Symbol	Unit	DF7VL	DF8VL	UF1VL	UF3VL	UF4VL
Peak Wavelength		λ_p	nm	265±5	280±10	310±5	325±5	340±5
Radiant Flux		P_o	mW	1.0	1.5	0.8	1.2	1.3
Full Width at Half Maximum		$\Delta\lambda$	nm	13	12	15	11	9
Forward Voltage		V_F	V	8-9	6.5	6-7	4.5	4.0
Response*	rise time	tr	ns	-	-	16	20	12
	fall time	tf	ns	-	-	8	9	8
Viewing Half Angle		$2\theta_{1/2}$	deg.	114	114	114	114	114

*Test condition : Frequency=100kHz, duty=1%, I_{fp}=200mA

Absolute Maximum Ratings

Item	Symbol	Unit		Ambient Temperature
Forward Current	I_{Fmax}	mA	40	T_a=25℃
Operating Temperature	T_{OPR}	℃	-30 ～ +80	
Storage Temperature	T_{STG}	℃	-40 ～ +100	
Soldering Temperature	T_{SOL}	℃	350 (within 3sec)	Manual soldering process
			250 (within 5sec)	Flow soldering process

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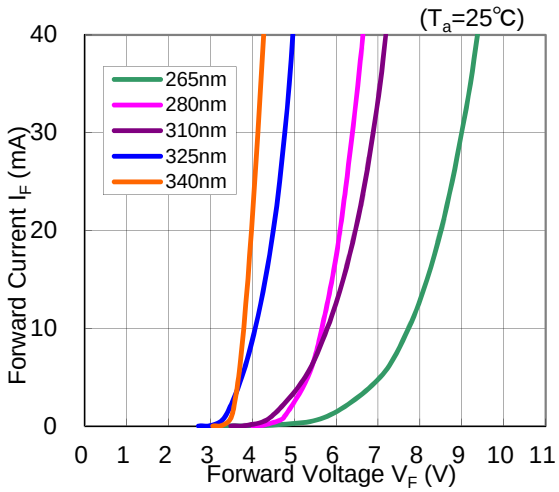
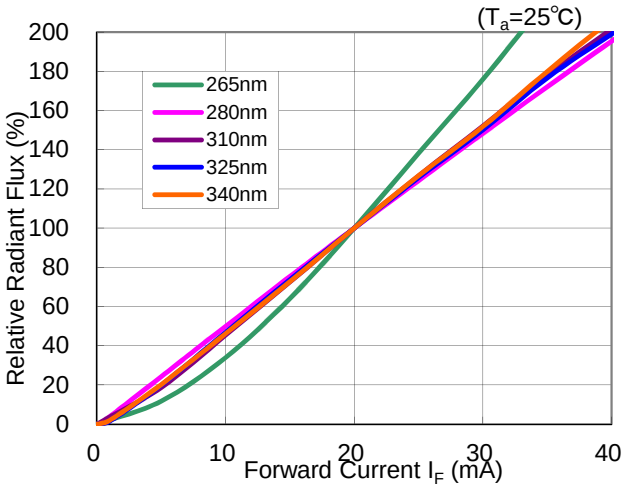
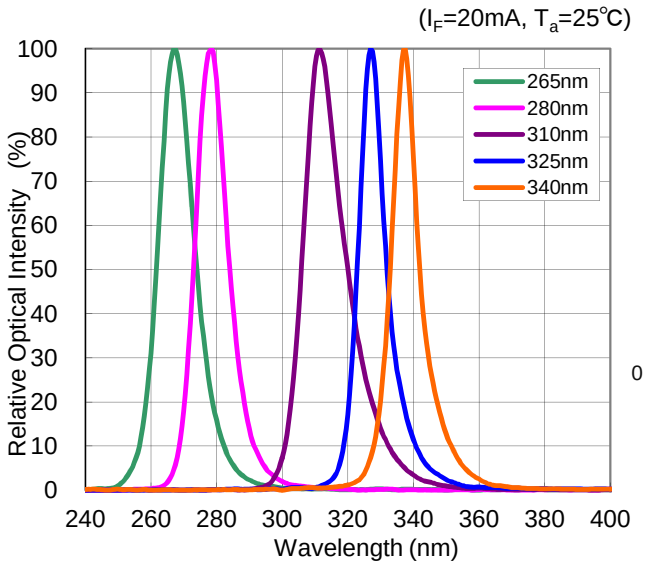
Forward Voltage vs Forward Current



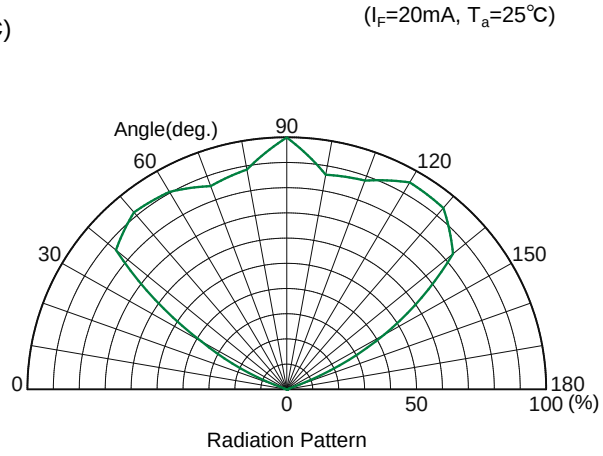
Forward Current vs Radiant Flux



Peak Wavelength vs Relavive Intensity



Radiation Pattern



⚠ WARNING

- **LEDs emit very strong UV radiation.**
- **Don't look directly into the LED light.**
  UV radiation can harm your eyes.
- **To prevent even inadequate exposure, wear protective eyewear.**
- **If LEDs are embedded in devices, please indicate warning labels against the UV light LED used.**
- **Keep out of reach of children.**
- **Specification and dimension are subject to change for improvement without notice.**

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DoUVLEDs

DOWA SUPERB UV LED SOLUTIONS

MODEL xFxVL-1H331 series

TO5 Hemispherical Can Type

RoHS

Mechanical Specifications and Materials (Unit: mm)

Product ID

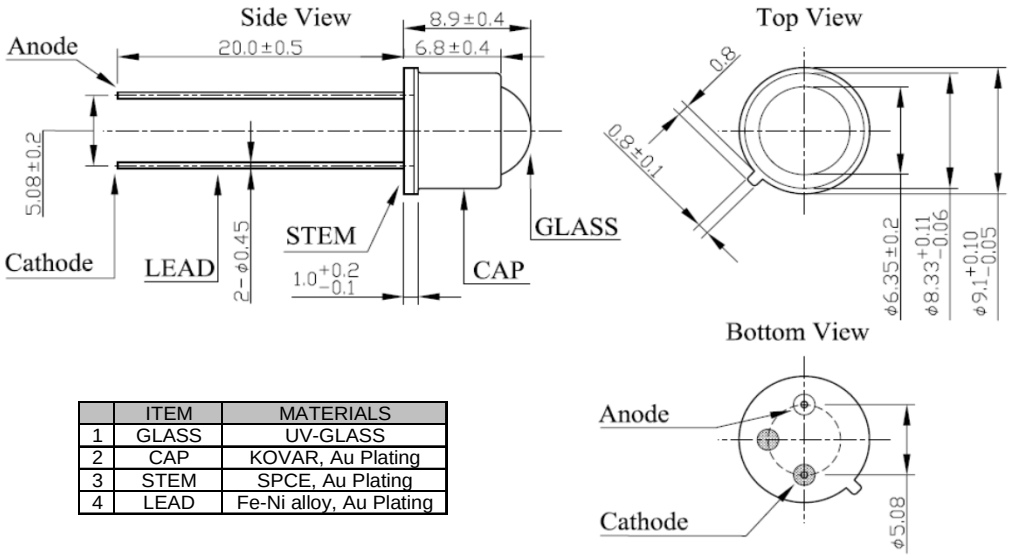
265nm: DF7VL-1H331

280nm: DF8VL-1H331

310nm: UF1VL-1H331

325nm: UF3VL-1H331

340nm: UF4VL-1H331



	ITEM	MATERIALS
1	GLASS	UV-GLASS
2	CAP	KOVAR, Au Plating
3	STEM	SPCE, Au Plating
4	LEAD	Fe-Ni alloy, Au Plating

Typical Optical-Electrical Characteristics (I_F=20mA, T_a=25℃)

Item		Symbol	Unit	DF7VL	DF8VL	UF1VL	UF3VL	UF4VL
Peak Wavelength		λ_p	nm	265±5	280±10	310±5	325±5	340±5
Radiant Flux		P_o	mW	0.5	0.9	0.4	0.7	0.8
Full Width at Half Maximum		$\Delta\lambda$	nm	13	12	15	11	9
Forward Voltage		V_F	V	8-9	6.5	6-7	4.5	4.0
Response*	rise time	tr	ns	-	-	16	20	12
	fall time	tf	ns	-	-	8	9	8
Viewing Half Angle		$2\theta_{1/2}$	deg.	6	6	6	6	6

*Test condition : Frequency=100kHz, duty=1%, I_{fp}=200mA

Absolute Maximum Ratings

Item	Symbol	Unit		Ambient Temperature
Forward Current	I_{Fmax}	mA	40	T_a=25℃
Operating Temperature	T_{OPR}	℃	-30 ～ +80	
Storage Temperature	T_{STG}	℃	-40 ～ +100	
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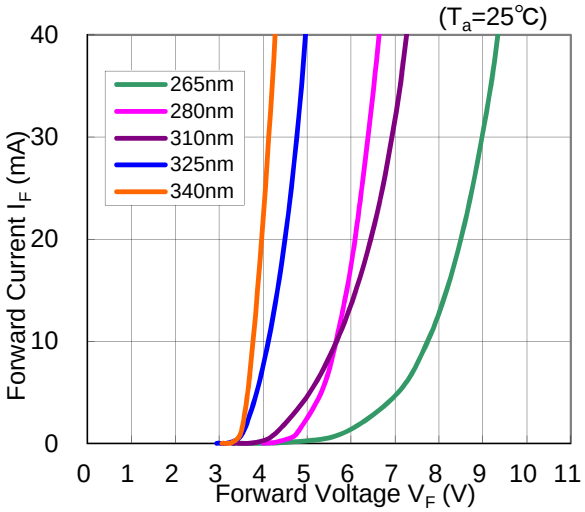
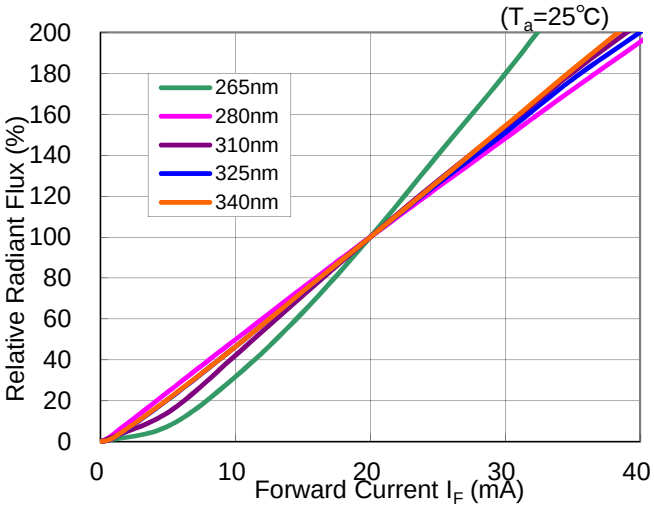
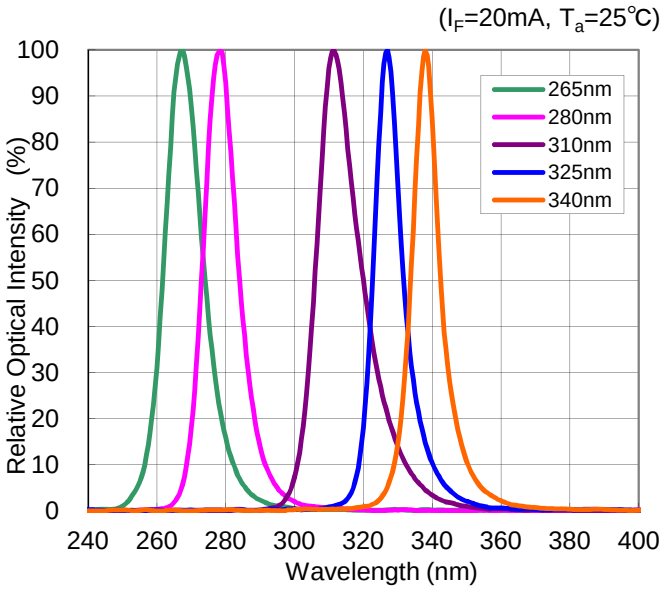
Forward Voltage vs Forward Current



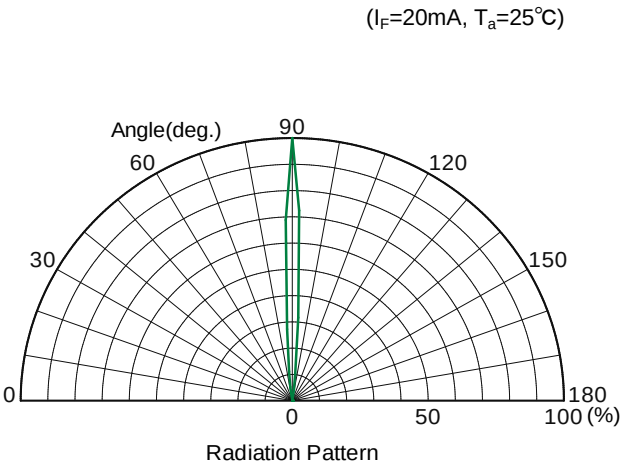
Forward Current vs Radiant Flux



Peak Wavelength vs Relavive Intensity



Radiation Pattern



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