

GL9□040 / GL8□040 Series

10.16mm Character Height
Numeric LEDs

■ Model No.

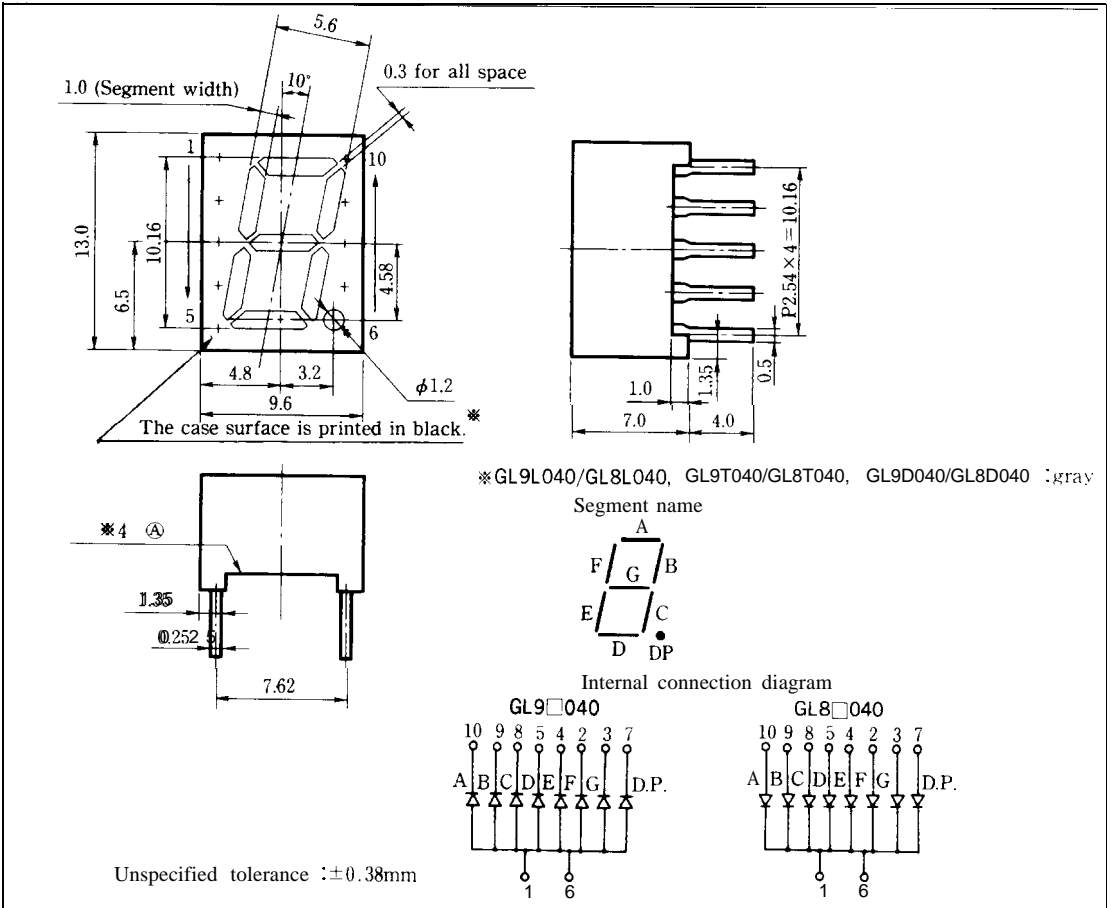
GL9L040/GL8L040	Red (High-luminosity)	GaAlAs/GaAs
GL9T040/GL8T040	Red (High-luminosity)	GaAlAs/GaAs
GL9P040/GL8P040	Red	GaP
GL9D040/GL8D040	Red	GaAsP/GaP
GL9S040/GL8S040	Sunset orange	GaAsP/GaP
GL9H040/GL8H040	Yellow	GaAsP/GaP
GL9E040/GL8E040	Yellow-green	GaP
GL9K040/GL8K040	Green	GaP

■ Features

1. Character height : 10.16mm
2. 1 digit
3. Case mold type
4. Small package
5. Diamond cut type segments

■ Outline Dimensions

(Unit: mm)



GL9□040 / GL8□040

■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	GL9L040	GL9P040	GL9D040	GL9S040	GL9E040	“nit
			GL8L040	GL8P040	GL8D040	GL8S040	GL8E040	
			GL9T040 GL8T040			GL9H040 GL8H040	GL9K040 GL8K040	
Power dissipation	※1 Per digit	P	308	263	322	350	263	mW
Continuous forward current	※1 Per digit	I _F	140	105	140	140	105	mA
	※2	I _F	20	15	20	20	15	mA
※3 Peak forward current	※2	I _{FM}	100	50	50	50	50	mA
Derating factor	※2 DC		0.36	0.27	0.36	0.36	0.27	mA/°C
	Pulse	—	1.82	0.91	0.91	0.91	0.91	mA/°C
Reverse voltage	Per segment	V _R	5	5	5	5	5	v
	Per decimal point	V _R	5	5	5	5	5	v
Operating temperature		T _{opr}	-30 to +70					°C
Storage temperature		T _{stg}	-40 to +80					°C
※4 Soldering temperature		T _{sol}	260 (within 5 seconds)					°C

※1 Per digit: 7 segments

※2 Per segment, or per decimal point

※3 Duty ratio = 1/10, Pulse width = 0.1ms

※4 At the position of 2.6 mm from (A) level of outline dimensions



GL9L040/GL8L040(Red),GL9T040/GL8T040{ Red}

■ **Electro-optical** Characteristics

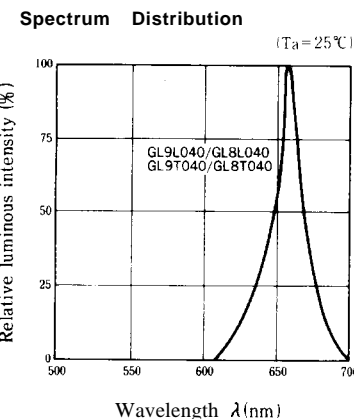
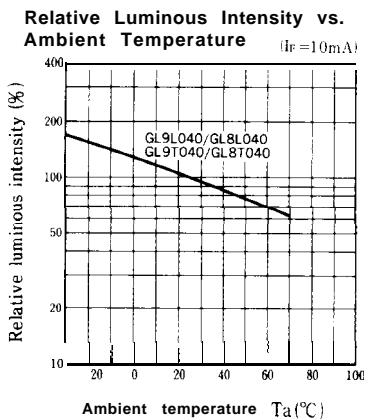
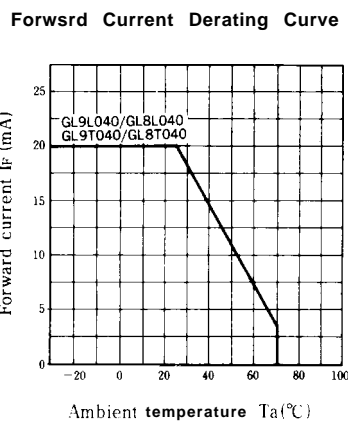
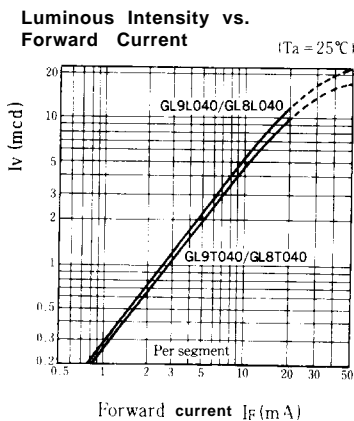
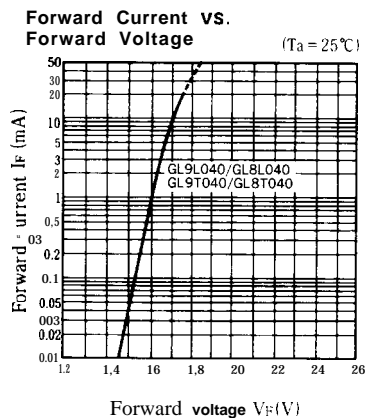
(Ta=25°C)

Parameter		Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	Per segment	V _F	GL9L040/GL8L040	I _F =10mA	—	1.7	2.2	V
			GL9T040/GL8T040	I _F =10mA	—	1.7	2.2	
	Per decimal point		GL9L040/GL8L040	I _F =10mA	—	1.7	2.2	V
			GL9T040/GL8T040	I _F =10mA	—	1.7	2.2	
*5 Luminous intensity	Per segment	I _v	GL9L040/GL8L040	I _F =10mA	2.20	5.50	—	mcd
			GL9T040/GL8T040	I _F =10mA	1.30	4.25	—	
	Per decimal point		GL9L040/GL8L040	I _F =10mA	0.50	1.30	—	mcd
			GL9T040/GL8T040	I _F =10mA	0.40	1.20	—	
*2 Peak emission wavelength	λ _p	GL9L040/GL8L040	I _F =10mA	—	660	—	nm	
		GL9T040/GL8T040	I _F =10mA	—	660	—		
*2 Spectrum radiation bandwidth	Δλ	GL9L040/GL8L040	I _F =10mA	—	20	—	nm	
		GL9T040/GL8T040	I _F =10mA	—	20	—		
Reverse current	Per segment	I _R	GL9L040/GL8L040	V _R =4V	—	—	10	μA
			GL9T040/GL8T040	V _R =4V	—	—	10	
	Per decimal point		GL9L040/GL8L040	V _R =4V	—	—	10	μA
			GL9T040/GL8T040	V _R =4V	—	—	10	
*2 Response frequency	f _c	GL9L040/GL8L040	—	—	8	—	MHz	
		GL9T040/GL8T040	—	—	8	—		

*2 Per segment, or per decimal point

*5 Tolerance: ±30%

■ **Characteristics Diagrams**



GL9P040/GL8P040(Red),GL9D040/GL8D040(Red)

(Ta=25°C)

■ Electro-optical Characteristics

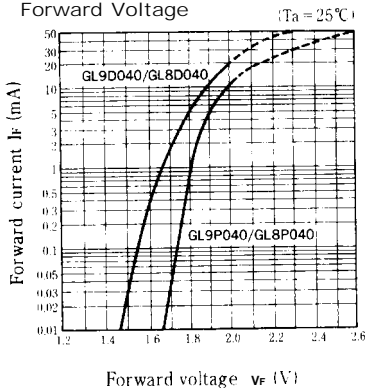
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	Per segment	GL9P040/GL8P040	If=5mA	—	1.9	2.5	V
		GL9D040/GL8D040	If=10mA	—	1.85	2.3	
	Per decimal point	GL9P040/GL8P040	If=5mA	—	1.9	2.5	V
		GL9D040/GL8D040	If=10mA	—	1.85	2.3	
※5 Luminous intensity	Per segment	GL9P040/GL8P040	If=5mA	0.3	0.6	—	mcd
		GL9D040/GL8D040	If=10mA	1.0	3.0	—	
	Per decimal point	GL9P040/GL8P040	If=5mA	0.1	0.2	—	mcd
		GL9D040/GL8D040	If=10mA	0.3	0.9	—	
※2 Peak emission wavelength	λ_p	GL9P040/GL8P040	If=5mA	—	695	—	'm
		GL9D040/GL8D040	If=10mA	—	635	—	
※2 Spectrum radiation bandwidth	$\Delta\lambda$	GL9P040/GL8P040	If=5mA	—	100	—	'm
		GL9D040/GL8D040	If=10mA	—	35	—	
Reverse current	Per segment	GL9P040/GL8P040	VR=4V	—	—	10	μA
		GL9D040/GL8D040	VR=4V	—	—	10	
	Per decimal point	GL9P040/GL8P040	VR=4V	—	—	10	μA
		GL9D040/GL8D040	VR=4V	—	—	10	
※2 Response frequency	fc	GL9P040/GL8P040	—	—	4	—	MHz
		GL9D040/GL8D040	—	—	4	—	

※2 Per segment, or per decimal point

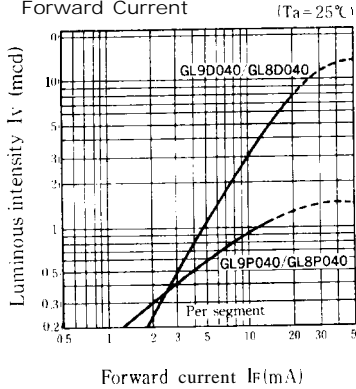
※5 Tolerance: ±30%

■ Characteristics Diagrams

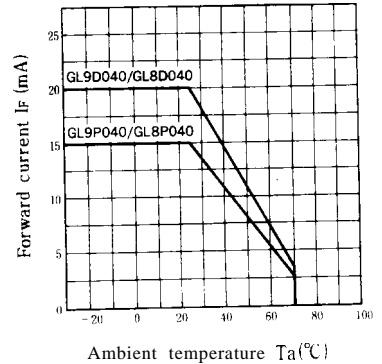
Forward Current vs. Forward Voltage



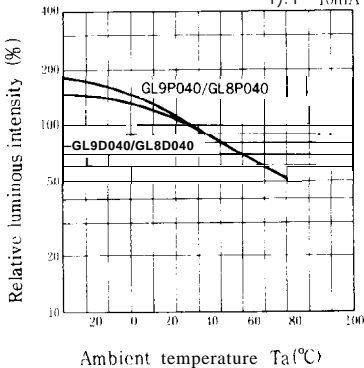
Luminous Intensity vs. Forward Current



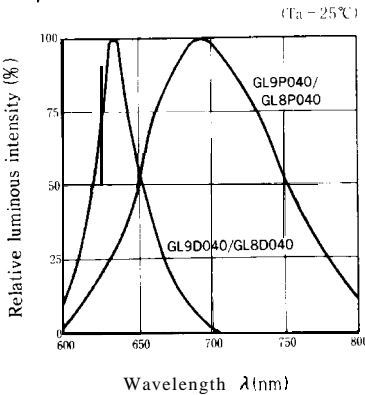
Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature, P: I1=5mA, I2=10mA



Spectrum Distribution



5

GL9S040/GL8S040(Sunset orange) ,GL9H040/GL8H040(Yellow)

■ Electro-optical Characteristics

(Ta=25°C)

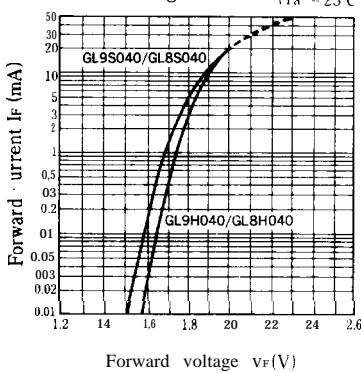
Parameter		Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	Per segment	V _F	GL9S040/GL8S040	I _F = 10mA	—	1.9	2.5	V
			GL9H040/GL8H040	I _F = 10mA	—	1.9	2.5	
	Per decimal point		GL9S040/GL8S040	I _F = 10mA	—	1.9	2.5	V
			GL9H040/GL8H040	I _F = 10mA	—	1.9	2.5	
*5 Luminous intensity	Per segment	I _v	GL9S040/GL8S040	I _F = 10mA	1.01	2.6	—	mcd
			GL9H040/GL8H040	I _F = 10mA	0.6	2.5	—	
	Per decimal point		GL9S040/GL8S040	I _F = 10mA	0.25	0.6	—	mcd
			GL9H040/GL8H040	I _F = 10mA	0.2	0.8	—	
*2 Peak emission wavelength		λ _p	GL9S040/GL8S040	I _F = 10mA	—	610	—	‘m
*2 Spectrum radiation bandwidth			Δλ	GL9S040/GL8S040	I _F = 10mA	—	35	
			GL9H040/GL8H040	I _F = 10mA	—	30	—	‘m
Reverse current	Per segment	I _R	GL9S040/GL8S040	V _R = 4V	—	—	10	μA
			GL9H040/GL8H040	V _R = 4V	—	—	10	
	Per decimal point		GL9S040/GL8S040	V _R = 4V	—	—	10	μA
			GL9H040/GL8H040	V _R = 4V	—	—	10	
*2 Response frequency		f _c	GL9S040/GL8S040	—	—	4	—	MHz
			GL9H040/GL8H040	—	—	4	—	

*2 Per segment, or per decimal point

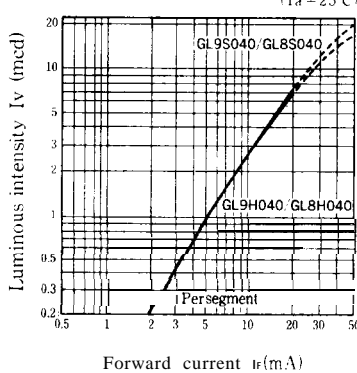
*5 Tolerance: ±30%

■ Characteristics Diagrams

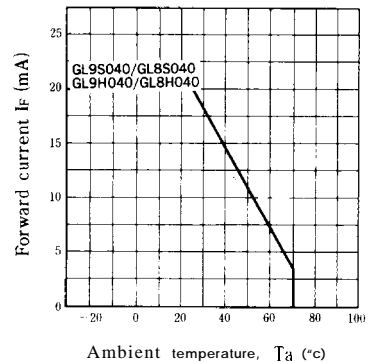
Forward Current vs. Forward Voltage



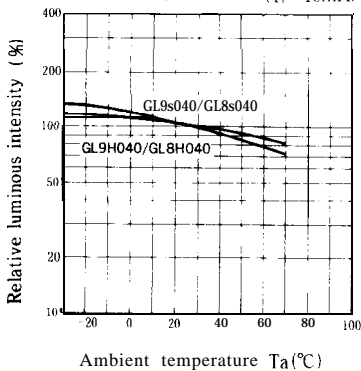
Luminous Intensity vs. Forward Current



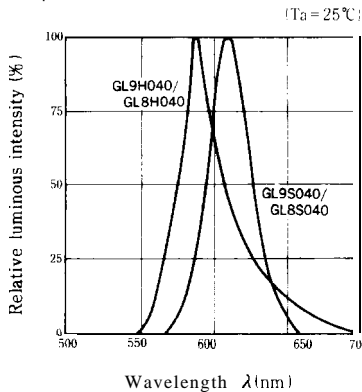
Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature



Spectrum Distribution



GL9E040/GL8E040(Yellow-green) ,GL9K040/GL8K040 (Green)

■ Electro-optical Characteristics

(Ta=25°C)

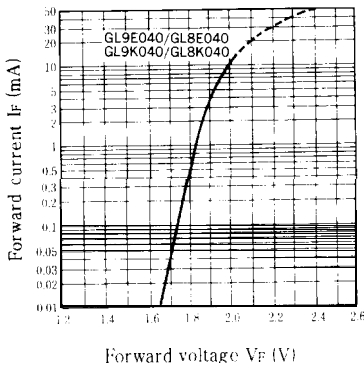
Parameter		Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit	
Forward voltage	Per segment	V _F	GL9E040/GL8E040	I _F =10mA	—	2.0	2.5	V	
			GL9K040/GL8K040	I _F =10mA	—	2.0	2.5		
	Per decimal point		GL9E040/GL8E040	I _F =10mA	—	2.0	2.5	V	
			GL9K040/GL8K040	I _F =10mA	—	2.0	2.5		
※5 Luminous intensity	Per segment	I _v	GL9E040/GL8E040	I _F =10mA	1.0	3.0	—	mcd	
			GL9K040/GL8K040	I _F =10mA	0.63	1.75	—		
	Per decimal point		GL9E040/GL8E040	I _F =10mA	—	0.3	0.9	—	mcd
			GL9K040/GL8K040	I _F =10mA	—	0.15	0.45	—	
※2 Peak emission wavelength		λ _p	GL9E040/GL8E040	I _F =10mA	—	565	—	nm	
spectrum radiation bandwidth			Δλ	GL9E040/GL8E040	I _F =10mA	—	30		—
			GL9K040/GL8K040	I _F =10mA	—	30	—		
Reverse current	Per segment	I _R	GL9E040/GL8E040	V _R =4V	—	—	10	μA	
			GL9K040/GL8K040	V _R =4V	—	—	10		
	Per decimal point		GL9E040/GL8E040	V _R =4V	—	—	10	μA	
			GL9K040/GL8K040	V _R =4V	—	—	10		
※2 Response frequency		f _c	GL9E040/GL8E040	—	—	4	—	MHz	
			GL9K040/GL8K040	—	—	4	—		

※2 Per segment, Or per decimal point

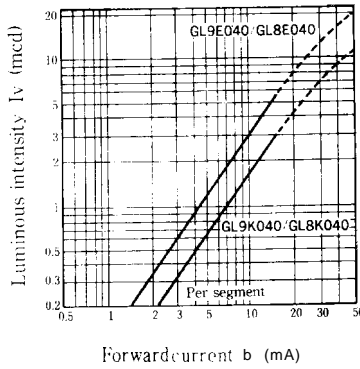
※5 Tolerance: ±30%

■ Characteristics Diagrams

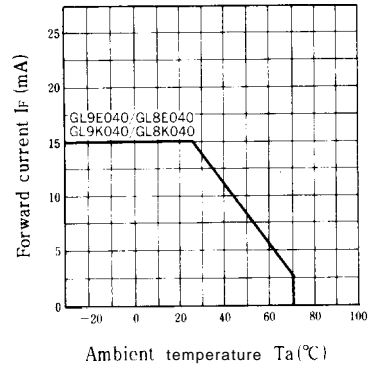
Forward Current vs. Forward Voltage (Ta=25°C)



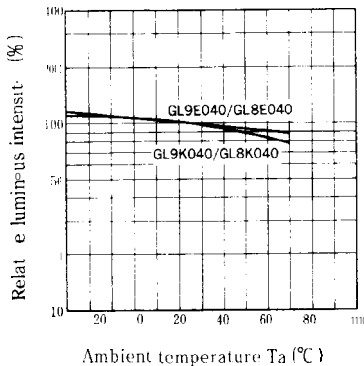
Luminous Intensity vs. Forward Current (Ta=25°C)



Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature (I_F=10mA)



Spectrum Distribution (Ta=25°C)

