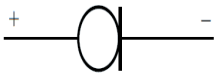
GOOD-ARK
SEMICONDUCTOR

GCR102
Current Regulating Diode

Features

- Negative temperature coefficient capability to protect the LED at high temperature
- Excellent current regulation ability during whole temperature range(-40°C to +150°C)
- High Reliability
- High dynamic impedance

eSGA(SOD-123FL)



Schematic Diagram

Description

Current regulating diode GCR102 supplies constant current to an electric circuit, even when power supply voltage fluctuations or load impedance fluctuations occur. The GCR102 is used for current stabilization and current limiting.

Absolute Maximum Ratings

(T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	500	mW
Max. Work Voltage	V_{MAX}	100	V
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-40 to +150	°C
Typical Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	250	°C/W

Electrical Characteristics

(T_A=25°C unless otherwise specified)

P/N	Marking Code	Regulator Current I_P @ V_T = 10V			Knee Current		Limiting Current Ratio	Temperature Coefficient
		Min	Nom	Max	@V_K	I_K	I_{100V} / I_P	25°C to 50°C
		mA	mA	mA	(V)		I_{30V} / I_P	%/°C
GCR102	102	0.88	1.00	1.32	1.7	min 0.8Ip	max 1.1 (I_{100V} / I_P)	-0.10 to -0.37

Typical Characteristic Curves

eSGA(SOD-123FL)

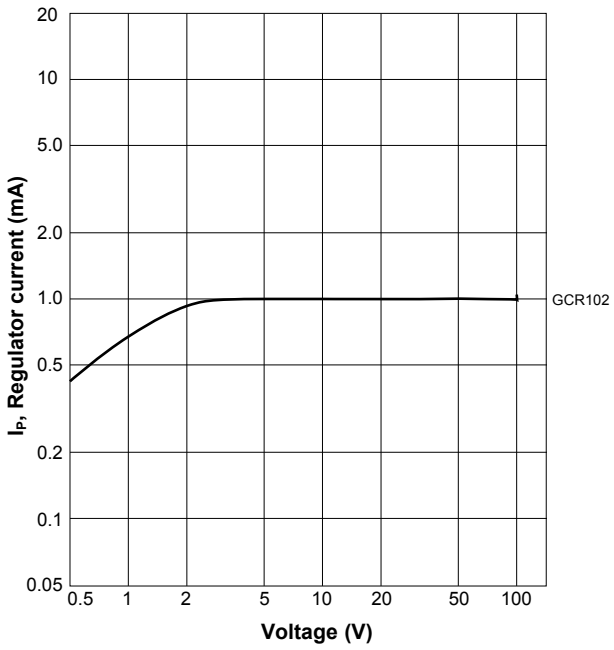


Fig.1 Regulator Voltage vs Current

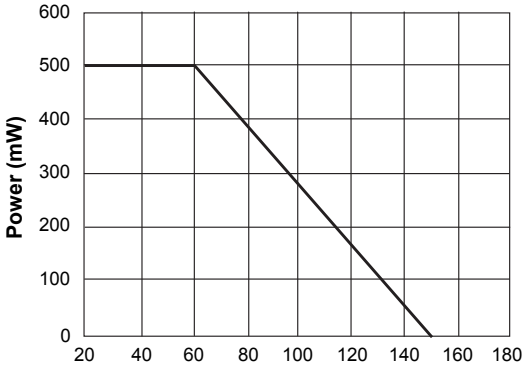


Fig.2 Power Derating Curve

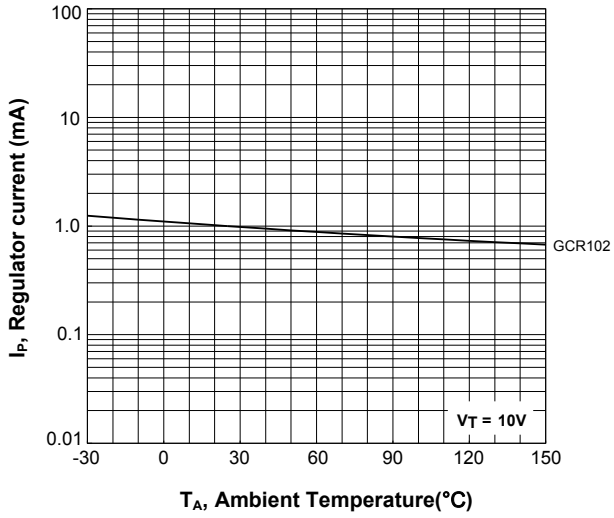


Fig.3 Nominal Regulator Current vs Temperature

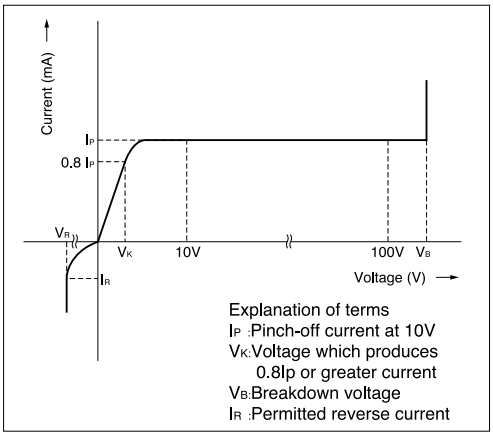
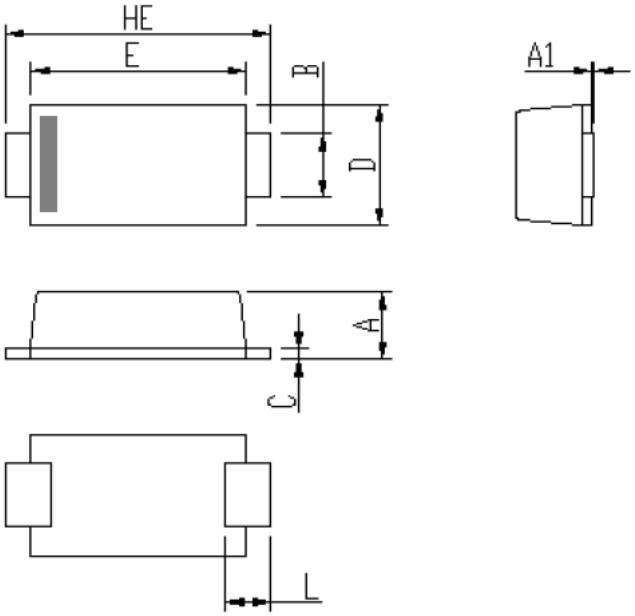


Fig.4 Basic Characteristics

Product Dimensions

eSGA(SOD-123FL)



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
A	0.900	1.080	0.035	0.043
A1	0.000	0.100	0.000	0.004
B	0.850	1.050	0.033	0.041
C	0.100	0.250	0.004	0.010
D	1.700	2.000	0.067	0.079
E	2.900	3.100	0.114	0.122
L	0.430	0.830	0.017	0.033
HE	3.500	3.900	0.138	0.154

Order Information

Device	Package	Marking Code	Carrier	Quantity	HSF Status
GCR102	eSGA (SOD-123FL)	102	Tape & Reel	3000pcs / Reel	RoHS Compliant