



TAYCHIPST

Controlled avalanche rectifiers

BYG50D THRU BYG50M

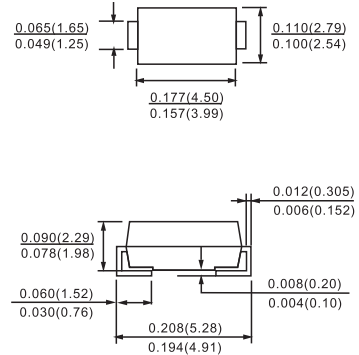
200V-1000V

0.7A-2.1A

FEATURES

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Guaranteed avalanche energy absorption capability
- UL 94V-O classified plastic package
- Shipped in 12 mm embossed tape.

DO-214AC(SMA)



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage				
	BYG50D		-	200	V
	BYG50G		-	400	V
	BYG50J		-	600	V
	BYG50K		-	800	V
V _R	continuous reverse voltage				
	BYG50D		-	200	V
	BYG50G		-	400	V
	BYG50J		-	600	V
	BYG50K		-	800	V
I _{F(AV)}	average forward current	averaged over any 20 ms period; T _{tp} = 100 °C; see Fig.2	-	2.1	A
		averaged over any 20 ms period; Al ₂ O ₃ PCB mounting (see Fig.7); T _{amb} = 60 °C; see Fig.3	-	1.0	A
		averaged over any 20 ms period; epoxy PCB mounting (see Fig.7); T _{amb} = 60 °C; see Fig.3	-	0.7	A
I _{FSM}	non-repetitive peak forward current	t = 10 ms half sinewave; T _j = T _{jmax} prior to surge; V _R = V _{RRMmax}	-	30	A





SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
E _{RSM}	non-repetitive peak reverse avalanche energy	L = 120 mH; T _j = T _{j max} prior to surge; inductive load switched off			
	BYG50D to J		–	10	mJ
	BYG50K and M		–	7	mJ
T _{stg}	storage temperature		–65	+175	°C
T _j	junction temperature	see Fig.4	–65	+175	°C

ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
V _F	forward voltage	I _F = 1 A; T _j = T _{j max} ; see Fig.5	–	–	0.85	V	
		I _F = 1 A; see Fig.5	–	–	1.00	V	
V _{(BR)R}	reverse avalanche breakdown voltage	I _R = 0.1 mA					
			BYG50D	300	–	–	V
			BYG50G	500	–	–	V
			BYG50J	700	–	–	V
			BYG50K	900	–	–	V
	BYG50M	1100	–	–	V		
I _R	reverse current	V _R = V _{RRMmax} ; see Fig.6	–	–	1	µA	
		V _R = V _{RRMmax} ; T _j = 165 °C; see Fig.6	–	–	100	µA	
t _{rr}	reverse recovery time	when switched from I _F = 0.5 A to I _R = 1 A; measured at I _R = 0.25 A; see Fig.8	–	2	–	µs	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-tp}	thermal resistance from junction to tie-point		25	K/W
R _{th j-a}	thermal resistance from junction to ambient	note 1	100	K/W
		note 2	150	K/W

Notes

1. Device mounted on Al₂O₃ printed-circuit board, 0.7 mm thick; thickness of copper ≥35 µm, see Fig.7.
2. Device mounted on epoxy-glass printed-circuit board, 1.5 mm thick; thickness of copper ≥40 µm, see Fig.7.
For more information please refer to the "General Part of associated Handbook".



RATINGS AND CHARACTERISTIC CURVES

BYG50D THRU BYG50M

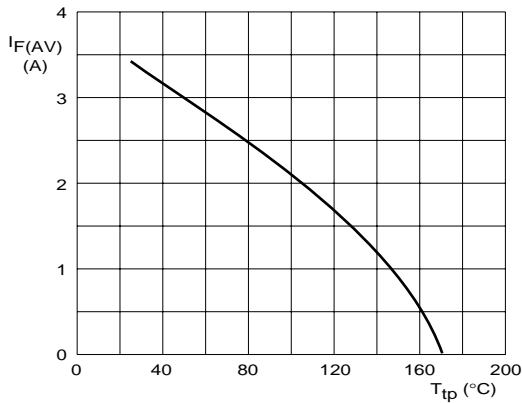


Fig.1 Maximum permissible average forward current as a function of tie-point temperature

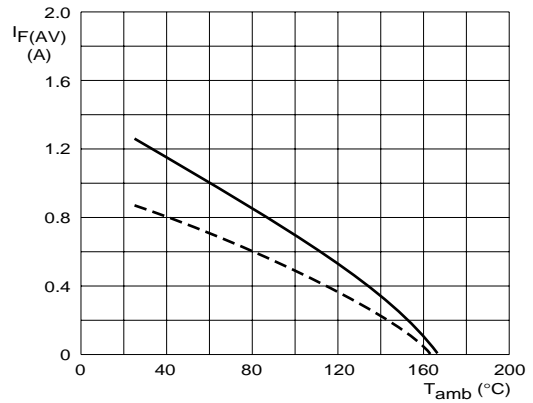


Fig.2 Maximum permissible average forward current as a function of ambient temperature

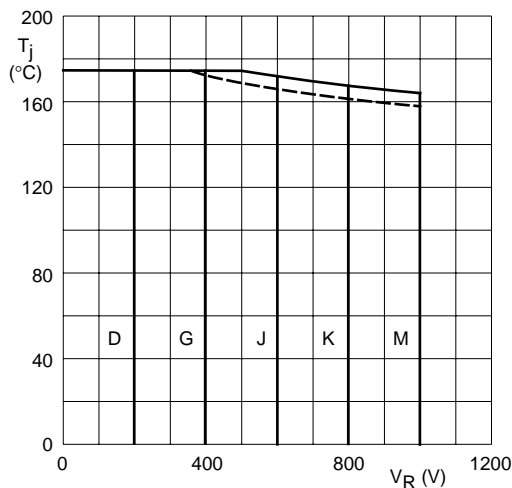


Fig.3 Maximum permissible junction temperature as a function of reverse voltage.

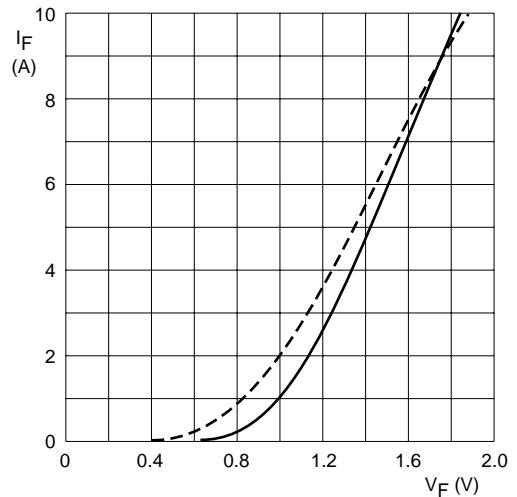


Fig. 4 Forward current as a function of forward voltage; maximum values.

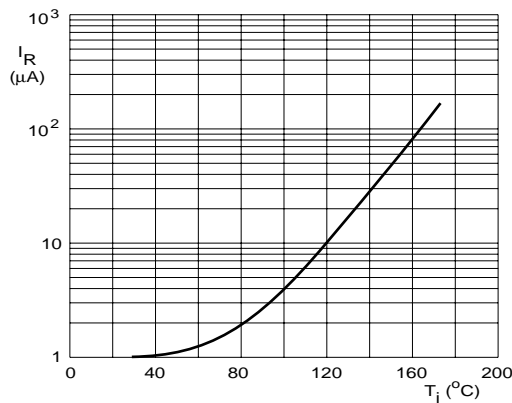


Fig.5 Reverse current as a function of junction temperature; maximum values.