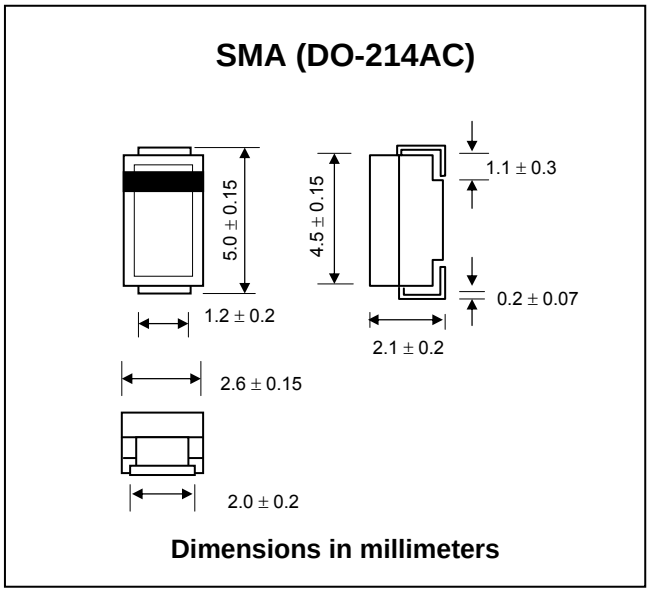
BYD77AA - BYD77GA

ULTRA FAST LOW-LOSS CONTROLLED AVALANCHE RECTIFIERS

PRV : 50 - 400 Volts
Io : 2.0 Amperes



FEATURES :

* Glass passivated junction chip
* High maximum operating temperature
* Low leakage current
* Excellent stability
* Smallest surface mount rectifier outline
* Pb / RoHS Free

MECHANICAL DATA :

* Case : SMA Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Lead Formed for Surface Mount
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 0.067 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

RATING	SYMBOL	BYD 77AA	BYD 77BA	BYD 77CA	BYD 77DA	BYD 77EA	BYD 77FA	BYD 77GA	UNIT
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	150	200	250	300	400	V
Maximum Continuous Reverse Voltage	V_R	50	100	150	200	250	300	400	V
Min. Reverse Avalanche Breakdown Voltage @ I_R = 0.1 mA	$V_{(BR)R-min}$	55	110	165	220	275	330	440	V
Maximum Average Forward Current	$I_{F(AV)}$	2.0 (1)				1.85 (1)			A
		0.85(2)				0.80 (2)			
Maximum Non-Repetitive Peak Forward Surge Current (Note 3)	I_{FSM}	25							A
Maximum Repetitive Peak Forward Current at Ttp = 105 °C	I_{FRM}	15				13			A
Maximum Forward Voltage at I_F = 1.0 A ; T_J = 25 °C	V_F	0.98				1.05			V
Maximum Reverse Current at $V_R = V_{RRMmax}$ T_J = 25 °C	I_R	1.0							µA
T_J = 165 °C	$I_{R(H)}$	100							µA
Maximum Reverse Recovery Time (Note 4)	Trr	25				50			ns
Thermal Resistance from Junction to Tie-Point	Rth j-tp	30							K / W
Thermal Resistance from Junction to Ambient (Note 5)	Rth j-a	150							K / W
Junction Temperature Range	T_J	- 65 to + 175							°C
Storage Temperature Range	T_{STG}	- 65 to + 175							°C

Notes :

(1) Ttp = 105 °C; see Fig. 1and 2; averaged over any 20 ms period; see also Fig.5 and 6

(2) Tamb = 60 °C; PCB mounting ; see Fig. 3 and 4; averaged over any 20 ms period; see also Fig.5 and 6

(3) t=10ms half sine wave; Tj = Tjmax prior to surge; $V_R = V_{RRMmax}$

(4) Reverse Recovery Test Conditions : I_F = 0.5 A, I_R = 1.0 A, Irr = 0.25 A.

(5) Device mounted on an epoxy-glass printed-circuit board, 1.5 mm thick; thickness of Cu-layer ≤ 40 µm.

RATING AND CHARACTERISTIC CURVES (BYD77AA - BYD77GA)

FIG.1 - MAXIMUM PERMISSIBLE AVERAGE FORWARD CURRENT AS A FUNCTION OF TIE-POINT TEMPERATURE

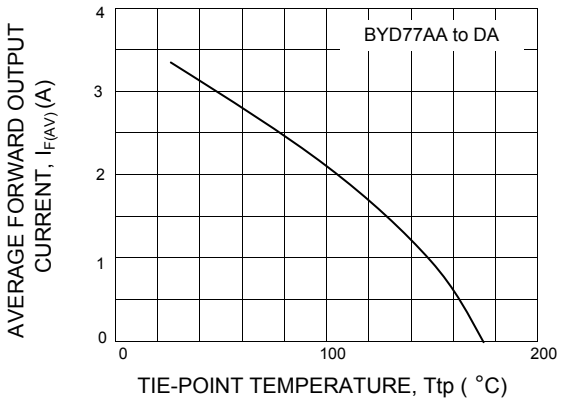


FIG.2 - MAXIMUM PERMISSIBLE AVERAGE FORWARD CURRENT AS A FUNCTION OF TIE-POINT TEMPERATURE

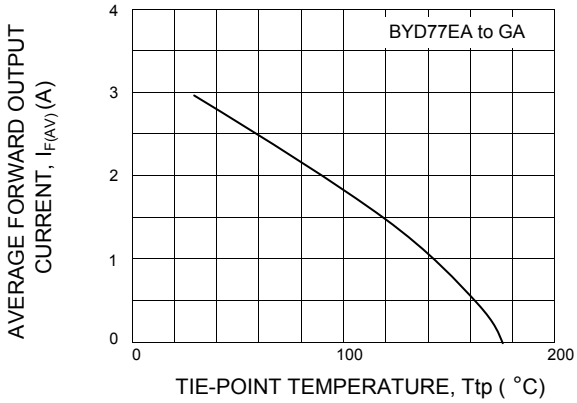


FIG.3 - MAXIMUM PERMISSIBLE AVERAGE FORWARD CURRENT AS A FUNCTION OF AMBIENT TEMPERATURE

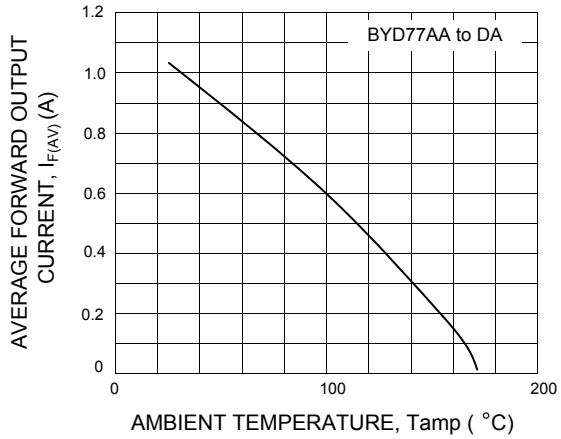


FIG.4 - MAXIMUM PERMISSIBLE AVERAGE FORWARD CURRENT AS A FUNCTION OF AMBIENT TEMPERATURE

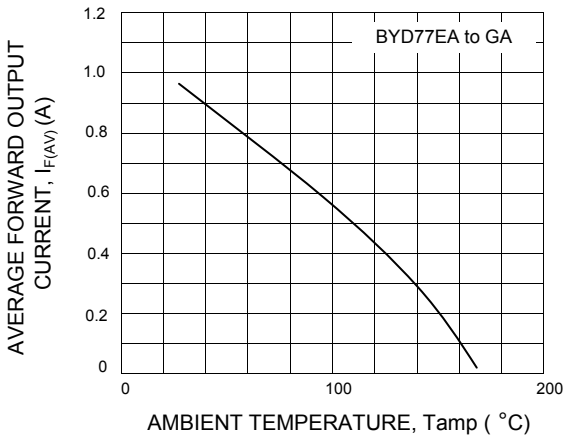


FIG.5 - MAXIMUM STEADY STATE POWER DISSIPATION AS A FUNCTION OF AVERAGE FORWARD CURRENT

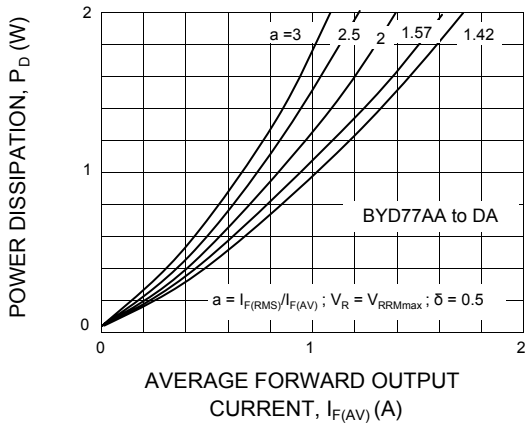
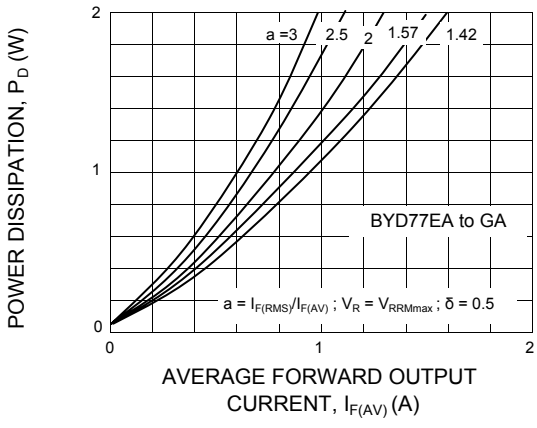


FIG.6 - MAXIMUM STEADY STATE POWER DISSIPATION AS A FUNCTION OF AVERAGE FORWARD CURRENT



RATING AND CHARACTERISTIC CURVES (BYD77AA- BYD77GA)

FIG.7 - FORWARD CURRENT AS FUNCTION OF FORWARD VOLTAGE

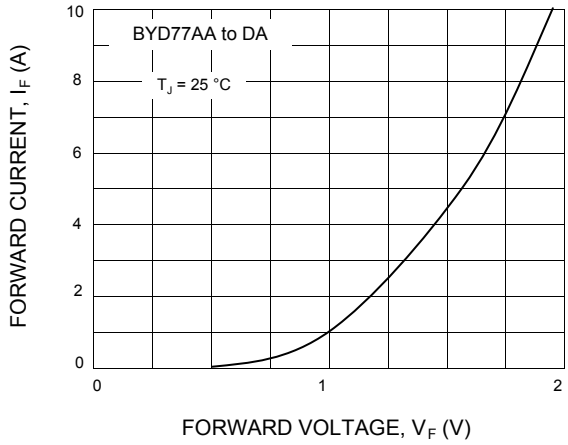


FIG.8 - FORWARD CURRENT AS FUNCTION OF FORWARD VOLTAGE

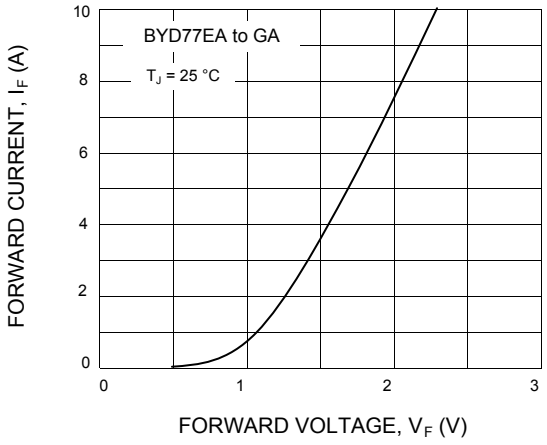


FIG.9 - REVERSE CURRENT AS FUNCTION OF JUNCTION TEMPERATURE

