

BYD57DA - BYD57VA

PRV : 200 - 1400 Volts
Io : 1.0 - 1.2 Amperes

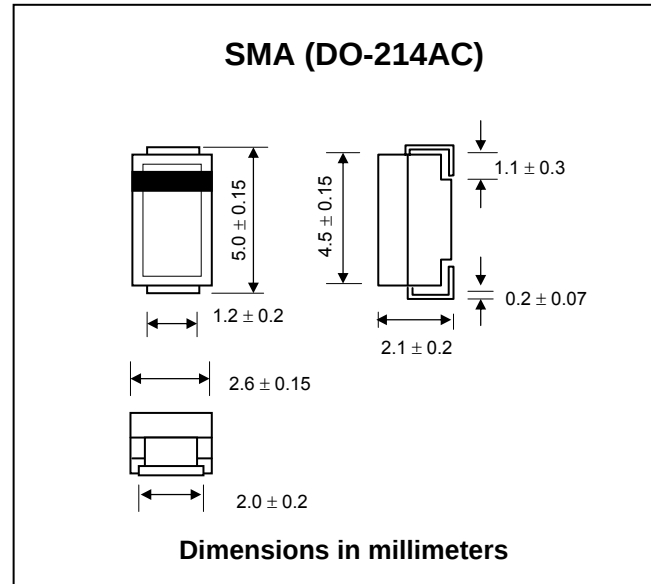
FEATURES :

- * 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

ULTRA-FAST SOFT-RECOVERY CONTROLLED AVALANCHE RECTIFIERS



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

RATING	SYMBOL	BYD 57DA	BYD 57GA	BYD 57JA	BYD 57KA	BYD 57MA	BYD 57UA	BYD 57VA	UNIT
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	200	400	600	800	1000	1200	1400	V
Maximum Continuous Reverse Voltage	V _R	200	400	600	800	1000	1200	1400	V
Min. Reverse Avalanche Breakdown Voltage @ I _R = 0.1 mA	V _{(BR)R-min}	300	500	700	900	1100	1300	1500	V
Maximum Average Forward Current	I _{F(AV)}	1.0 ⁽¹⁾					1.2 ⁽¹⁾		A
		0.4 ⁽²⁾							
Maximum Non-Repetitive Peak Forward Surge Current (Note 3)	I _{FSM}	5							A
Maximum Repetitive Peak Forward Current at T _{tp} = 85 °C	I _{FRM}	8.5					11		A
Maximum Forward Voltage at I _F = 1.0 A ; T _J = 25 °C	V _F	3.6					2.3		V
Maximum Reverse Current at V _R =V _{RRMmax} T _J = 25 °C T _J = 165 °C	I _R	5.0							μA
	I _{R(H)}	100							μA
Maximum Reverse Recovery Time (Note 4)	T _{rr}	30			75		150		ns
Thermal Resistance from Junction to Tie-Point	R _{th j-tp}	30							K / W
Thermal Resistance from Junction to Ambient (Note 5)	R _{th 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) $T_{tp} = 85$ °C; see Fig. 1 and 2; averaged over any 20 ms period; see also Fig.5 and 6.
- (2) $T_{amb} = 60$ °C; PCB mounting ; see Fig. 3 and 4; averaged over any 20 ms period; see also Fig.5 and 6.
- (3) $t = 10$ ms half sine wave; $T_J = T_{Jmax}$ prior to surge; $V_R = V_{RRMmax}$
- (4) Reverse Recovery Test Conditions : $I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ 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 (BYD57DA - BYD57VA)

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

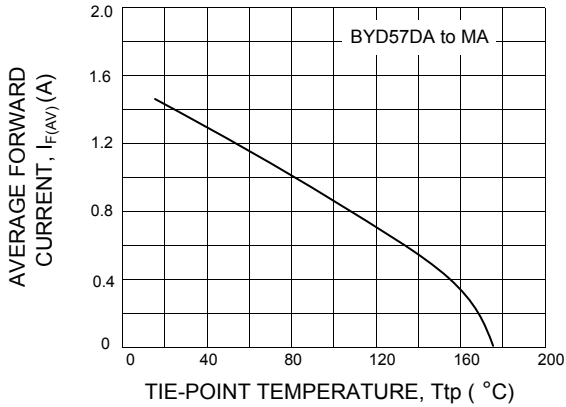


FIG.2 - MAXIMUM PERMISSIBLE AVERAGE FORWARD CURRENT AS A FUNCTION OF TIE-POINT TEMPERATURE

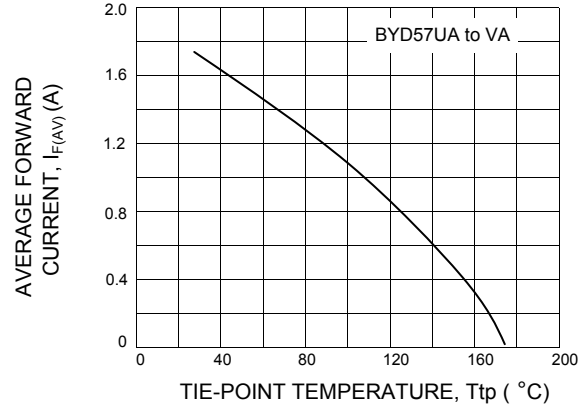


FIG.3 - MAXIMUM PERMISSIBLE AVERAGE FORWARD CURRENT AS A FUNCTION OF AMBIENT TEMPERATURE

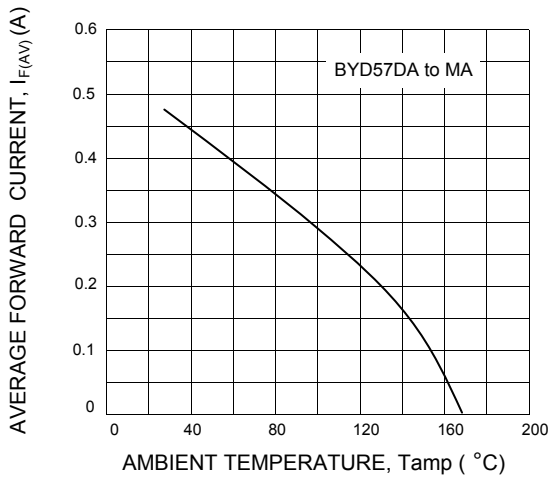


FIG.4 - MAXIMUM PERMISSIBLE AVERAGE FORWARD CURRENT AS A FUNCTION OF AMBIENT TEMPERATURE

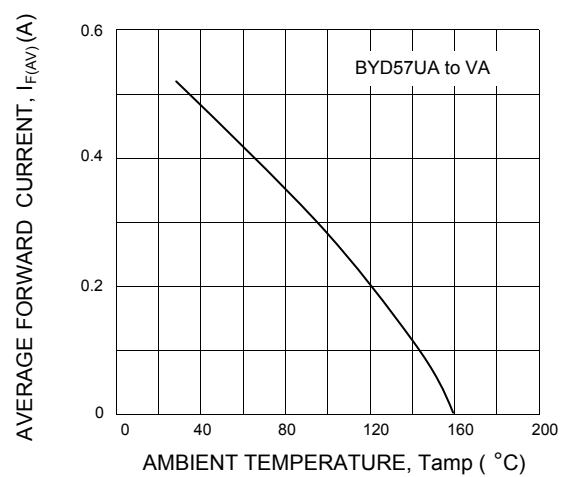


FIG.5 - MAXIMUM STEADY STATE POWER DISSIPATION AS A FUNCTION OF AVERAGE FORWARD CURRENT

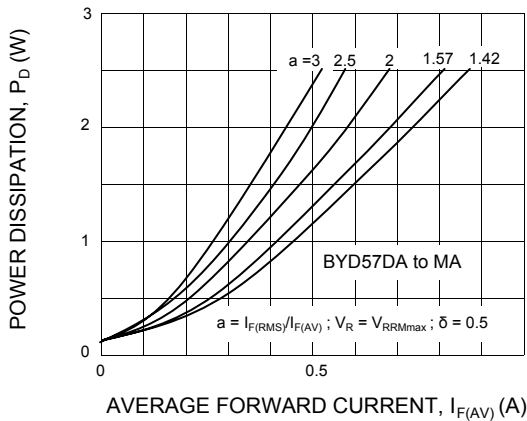
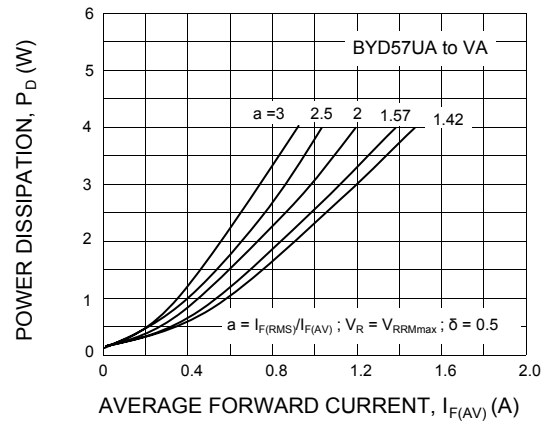


FIG.6 - MAXIMUM STEADY STATE POWER DISSIPATION AS A FUNCTION OF AVERAGE FORWARD CURRENT



RATING AND CHARACTERISTIC CURVES (BYD57DA - BYD57VA)

FIG.7 - FORWARD CURRENT AS FUNCTION OF FORWARD VOLTAGE

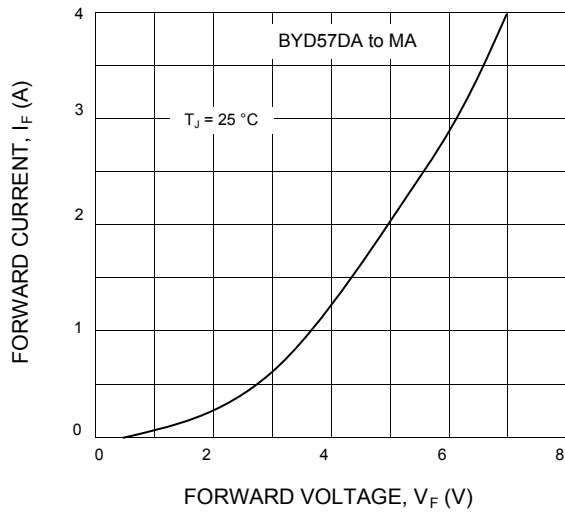


FIG.8 - FORWARD CURRENT AS FUNCTION OF FORWARD VOLTAGE

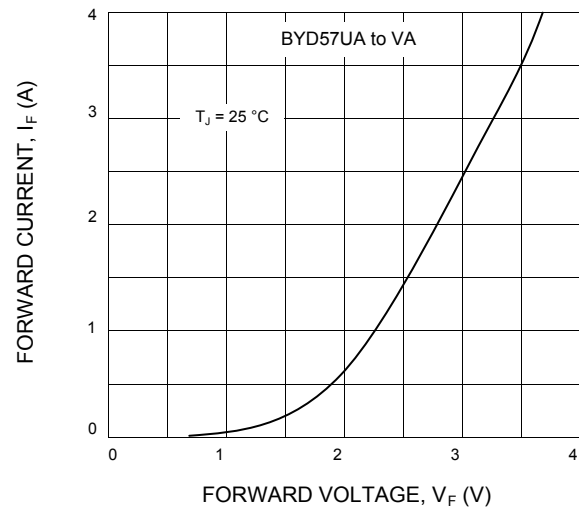


FIG.9 - REVERSE CURRENT AS FUNCTION OF JUNCTION TEMPERATURE

