

**Pb Free Plating Product**

B402P/B403P/B404P/B405P/B406P



40 Ampere Standard Type Positive Block Rectifier Diodes for Automotive Alternators

**Feature:**

- ◆ Low leakage
- ◆ Low forward voltage drop
- ◆ High current capability
- ◆ High forward surge current capability

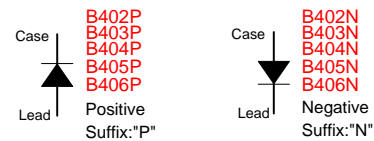
**Application:**

- ◆ Block Diode/Alternator Diode with AEC-Q101 Grade Quality
- ◆ Stack Silicon Diffused Diode alternative
- ◆ Special for Automotive AC Alternator rectifier application

**Mechanical Data:**

- ◆ Technology: Latest Glass Passivation Pellet/Cu Clip Bonding
- ◆ Case: Vacuum soldered/sintered temperature < 260
- ◆ Cathode Polarity: As marked on body
- ◆ Lead: Plated lead, solderable per MIL-STD-202E method 208C
- ◆ Mounting: BLOCK/TO-230/BA/MR/K series package type

BLOCK/TO-230/BA/MR/K series



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

- Ratings at 25°C ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

	SYMBOLS	B402P	B403P	B404P	B405P	B406P	UNIT
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	200	300	400	500	600	Volts
Maximum RMS Voltage	$V_{RMS}$	140	210	280	350	420	Volts
Maximum DC Blocking Voltage	$V_{DC}$	200	300	400	500	600	Volts
Maximum Average Forward Rectified Current, At $T_c = 105^\circ C$	$I_o$	40					Amps
Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	500					Amps
Rating for fusing ( $t < 8.3ms$ )	$I^2t$	1037					$A^2S$
Maximum Instantaneous Forward Voltage Drop at 100A	$V_F$	1.10					Volts
Maximum DC Reverse Current at Rated $T_A = 25^\circ C$	$I_R$	5.0					$\mu A$
DC Blocking Voltage $T_A = 100^\circ C$		450					
Typical Thermal Resistance	$R_{\theta JL}$	1.0					$^\circ C/W$
Operating and Storage Temperature Rang	$T_L, T_{STG}$	(-65 to +175)					$^\circ C$

**NOTES:**

1. Enough heatsink must be considered in application.

## RATINGS AND CHARACTERISTIC CURVES B402P thru B406P

FIG.1 TYPICAL FORWARD CURRENT DERATING CURVE

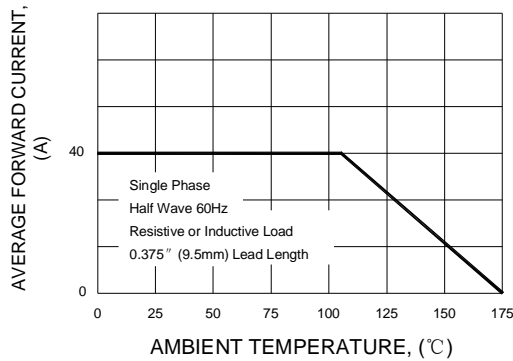


FIG.2 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

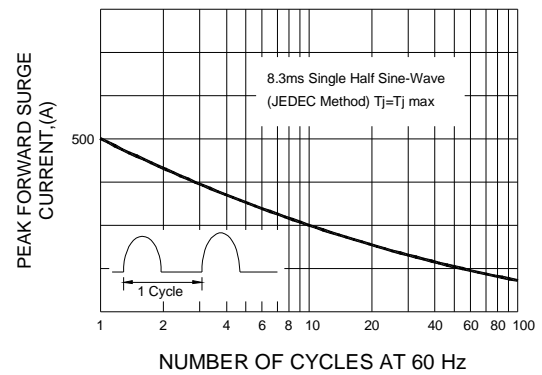


FIG.3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

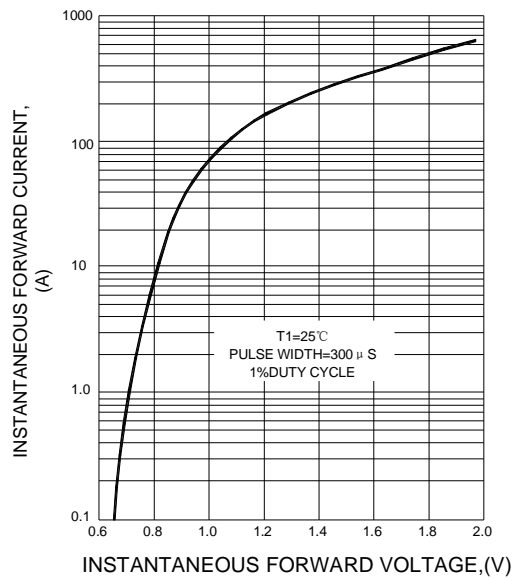
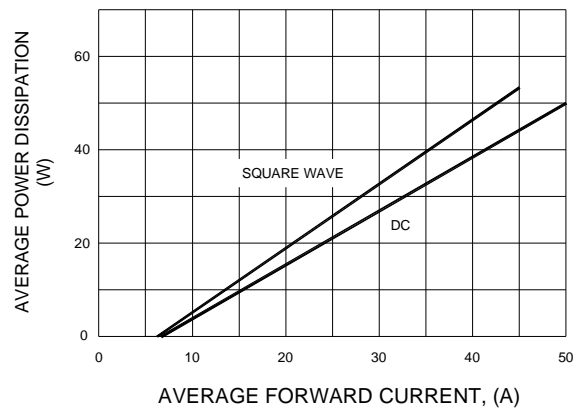
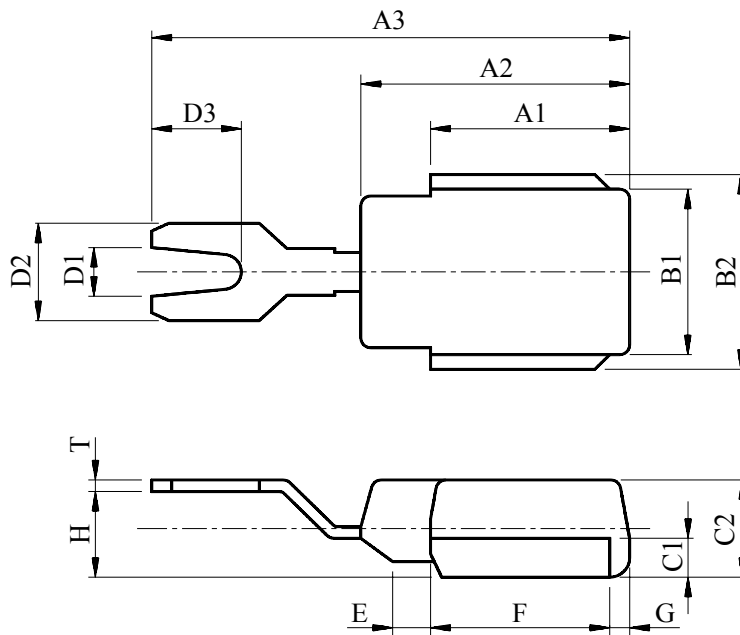


FIG.4 FORWARD POWER DISSIPATION



BLOCK/TO-230/BA/MR/K Series Package Outline



DIM	MILLIMETERS	DIM	MILLIMETERS
A1	10.0±0.3	D2	5.0±0.3
A2	13.5±0.3	D3	4.5±0.3
A3	24.0±0.5	E	1.9±0.3
B1	8.5±0.3	F	9.0±0.3
B2	10.0±0.3	G	1.0±0.3
C1	2.0±0.3	H	4.4±0.5
C2	5.0±0.3	T	0.6±0.3
D1	2.5±0.3		