

Pb Free Plating Product

BD402N/BD403N/BD404N/BD405N/BD406N



40 Ampere Standard Type Negative Block Rectifier Diodes for Automotive Alternators

Feature:

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

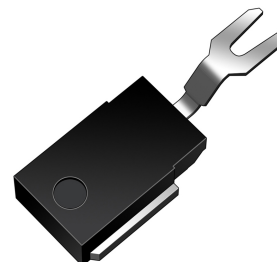
Application:

- ◆ 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 °C
- ◆ 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



Case
Lead
Positive
Suffix:"P"

Case
Lead
Negative
Suffix:"N"

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%

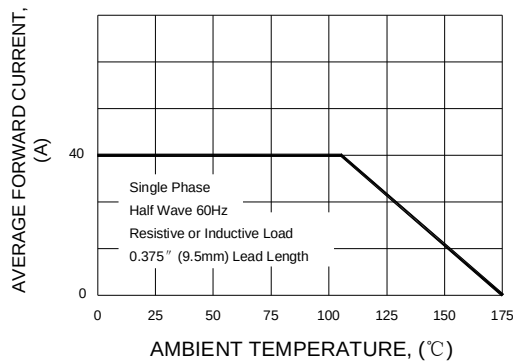
	SYMBOLS	BD402N	BD403N	BD404N	BD405N	BD406N	UNIT
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	200	300	400	500	600	Volts
Maximum RMS Voltage	V _{RMS}	140	210	280	350	420	Volts
Maximum DC Blocking Voltage	V _{DC}	200	300	400	500	600	Volts
Maximum Average Forward Rectified Current, At T _C = 105°C	I _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 ² t	1037					A ² S
Maximum Instantaneous Forward Voltage Drop at 100A	V _F	1.10					Volts
Maximum DC Reverse Current at Rated TA=25°C	I _R	5.0					µA
DC Blocking Voltage TA=100°C		450					
Typical Thermal Resistance	R _{θJL}	1.0					°C/W
Operating and Storage Temperature Rang	T _J , T _{STG}	(-65 to +175)					°C

NOTES:

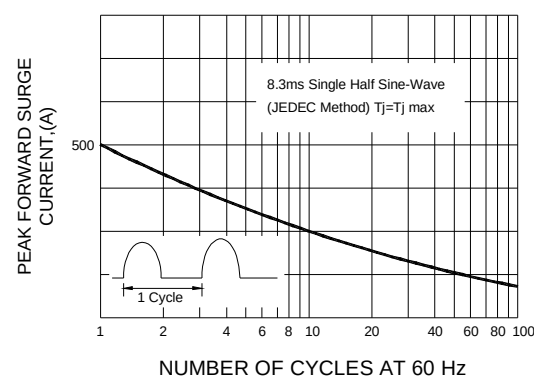
- 1.Enough heatsink must be considered in application.

RATINGS AND CHARACTERISTIC CURVES BD402N thru BD406N

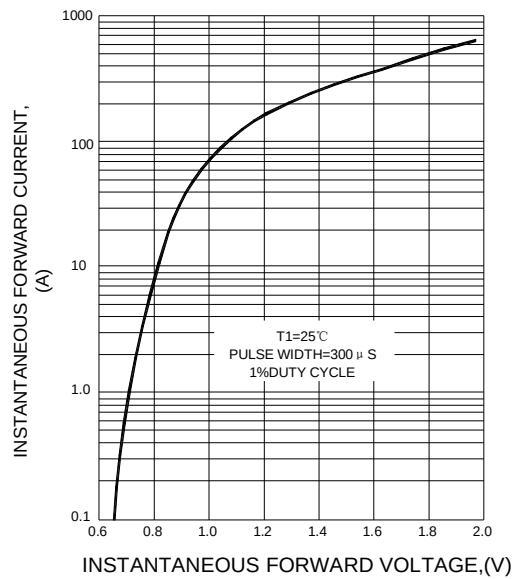
F1G.1 TYPICAL FORWARD CURRENT DERATING CURVE



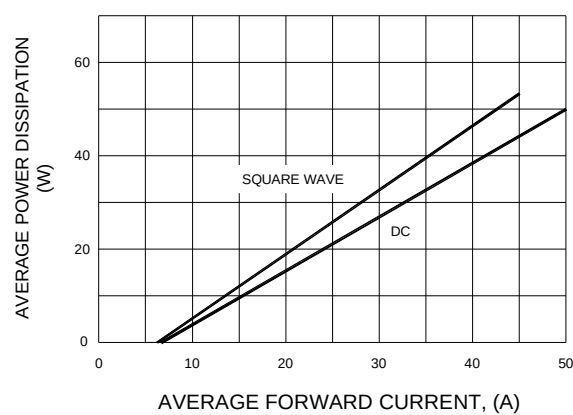
F1G.2 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



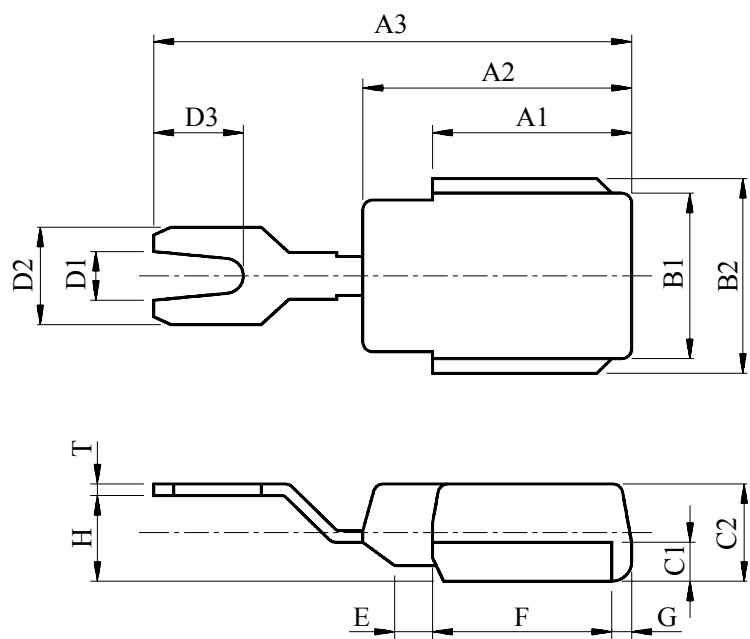
F1G.3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



F1G.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		