THINKI SEMICONDUCTOR ®

Pb Free Plating Product

BD502P/BD503P/BD504P/BD505P/BD506P

RoHS Pb

50 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:

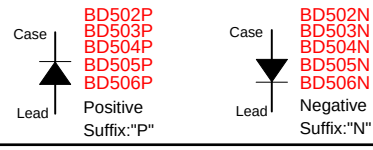
- Block Diode/Alternator Diode with AEC-Q101 Grade Quality
- Stack Silicon Diffused Diode alternative
- Special for Automotive AC Alternator rectifier application

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

	SYMBOLS	BD502P	BD503P	BD504P	BD505P	BD506P	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℃	I_o	50					Amps
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	I_{FSM}	600					Amps
Rating for fusing (t<8.3ms)	I^2t	1494					A^2S
Maximum Instantaneous Forward Voltage Drop at 100A	V_F	1.08					Volts
Maximum DC Reverse Current at Rated TA=25℃	I_R	5.0					μA
DC Blocking Voltage TA=100℃		450					
Typical Thermal Resistance	$R_{\theta JL}$	1.0					℃/W
Operating and Storage Temperature Rang	T_J, T_{STG}	(-65 to +175)					℃

NOTES:

1.Enough heatsink must be considered in application.

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RATINGS AND CHARACTERISTIC CURVES BD502P thru BD506P

FIG .1 TYPICAL FORWARD CURRENT DERATING GURVE

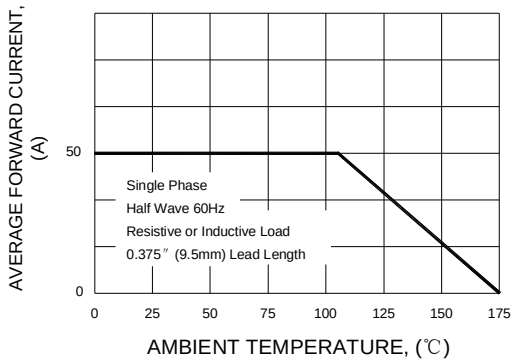


FIG .2 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

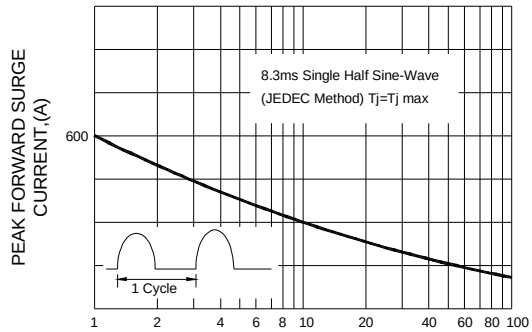


FIG .3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

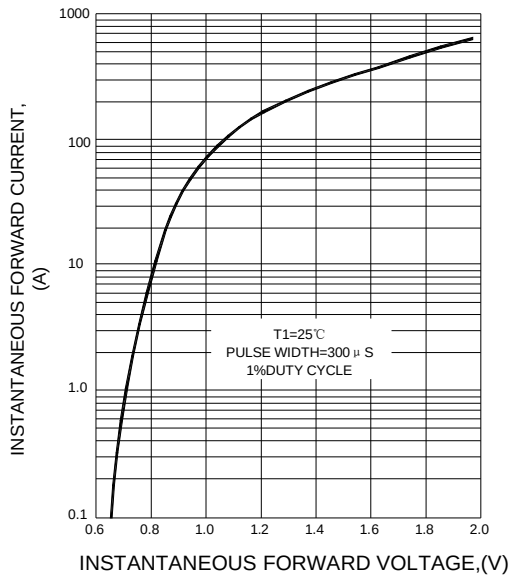
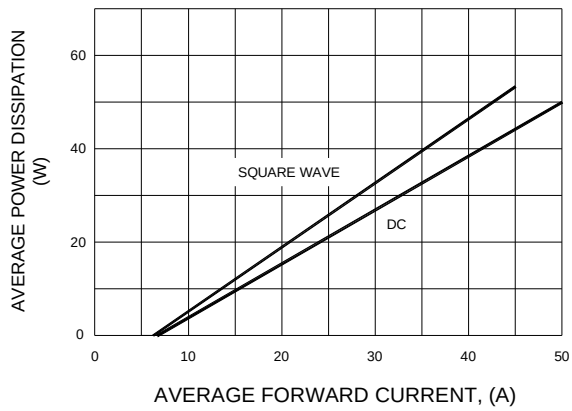


FIG .4 FORWARD ROWER DISSIPATION



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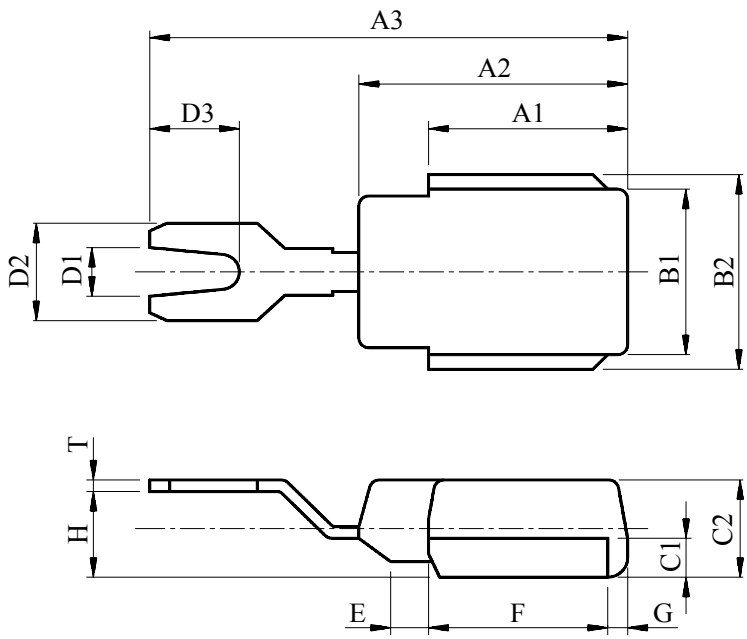
BLOCK/TO-230/BA/MR/K Series Package Outline



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		

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