

## RECTIFIER DIODE

### Features

1. 40DS series Diodes are designed for various power controls
2. Voltage rating up to 1600V

### Typical Applications

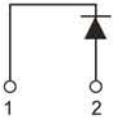
- AC/DC Converters
- Supplies for DC power equipment
- Field supply for DC motors
- Machine tool controls
- DC supply for PWM inverter

### Ordering code

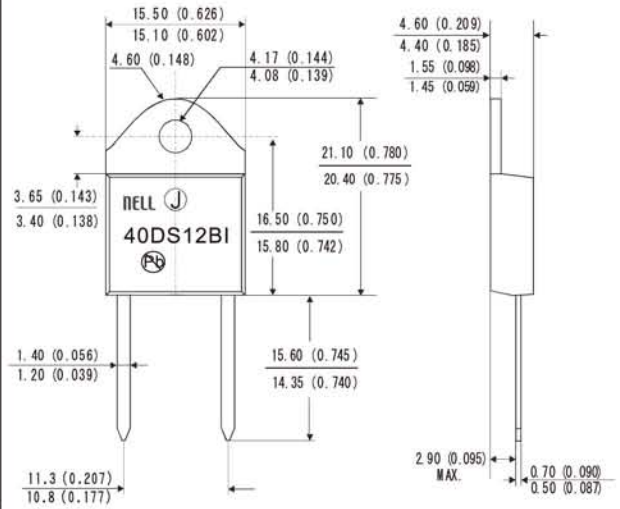
**40** **DS** **xx** **B** **I**

(1) (2) (3) (4) (5)

- (1) Max.  $R_{MS}$  on-state current
- (2) D-for standard recovery diodes
- (3) Voltage code, code  $\times 100 = V_{RRM}/V_{DRM}$
- (4) For case style A=TO-220AB, B=TO-P3
- (5) I=insulated(2500V  $R_{MS}$ ), None=non insulated



### Case Style



All dimensions in millimeters(inches)

### Electrical Characteristics

Symbol	Parameter	Condition	Value	Unit
$I_{F(AV)}$	Maximum average forward current	$180^\circ$ conduction, half sine wave $T_C=110^\circ C$	40	A
$V_{RRM}$	Repetitive peak reverse voltage	$t_p=10$ ms $V_{RMS} = V_{RRM} \times 1.1$	400 to 1600	V
$I_{FSM}$	Surge forward current	10ms Sine pulse no voltage reapplied	480	A
$I^2_t$	$I^2_t$ for fusing		1135	$A^2 S$
$V_{FM}$	Peak forward voltage	@40, $T_j=25^\circ C$	1.14	V
$r_t$	Forward slope resistance	$T_j=150^\circ C$	7.6	$m\Omega$
$V_{F(TO)}$	Threshold Voltage		0.7	V
$T_{stg}$	Storage temperature range		-40 to 150	$^\circ C$
$R_{th(j-c)}$	Thermal resistance ( junction to case )	DC operation	0.6	$^\circ C/W$
$w_t$	Approximate weight		6	g
T	Mounting torque	Not lubricated threads	6-12	kg-cm

Fig. 1 – Current Rating Characteristics

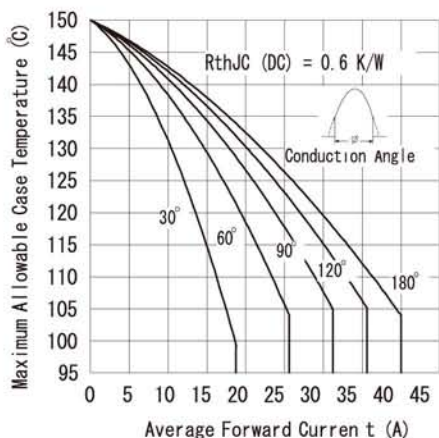


Fig. 2 – Current Rating Characteristics

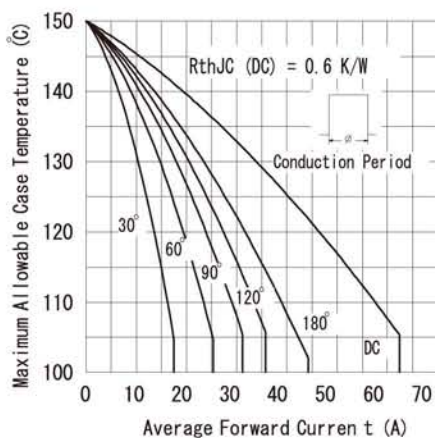


Fig. 3 – Forward Power Loss Characteristics

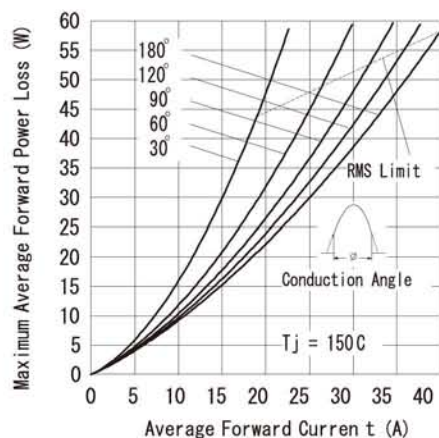


Fig. 4 – Forward Power Loss Characteristics

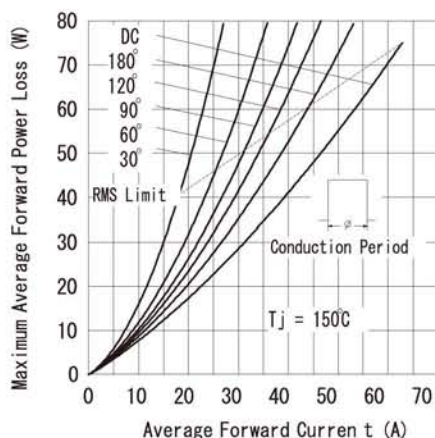


Fig. 5 – Forward Voltage Drop Characteristics

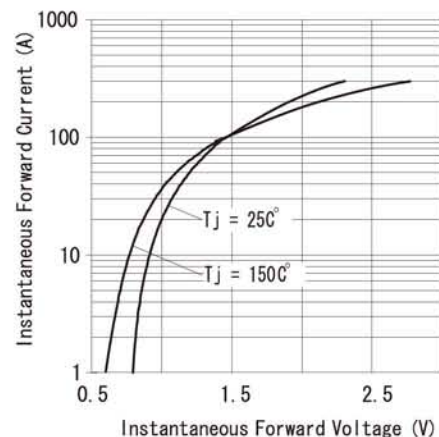
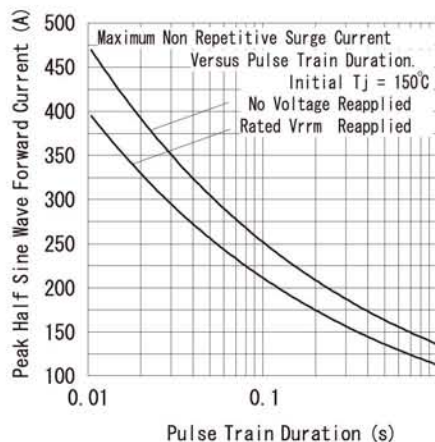


Fig. 6 – Maximum Non-Repetitive Surge Current



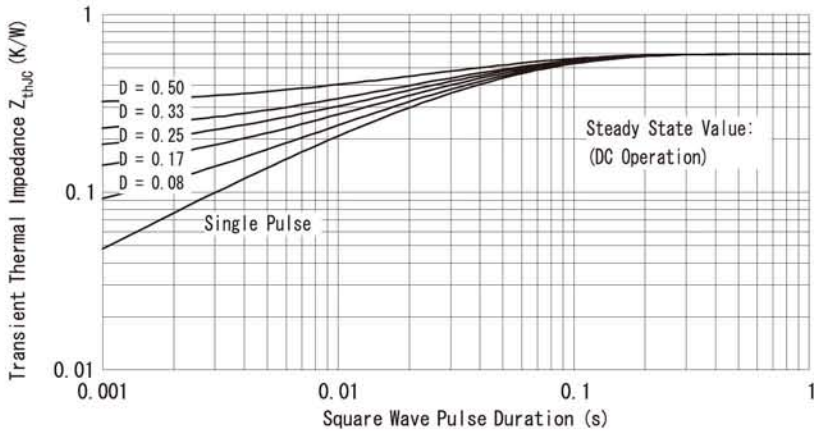


Fig. 7 - Thermal Impedance  $Z_{thJC}$  Characteristics