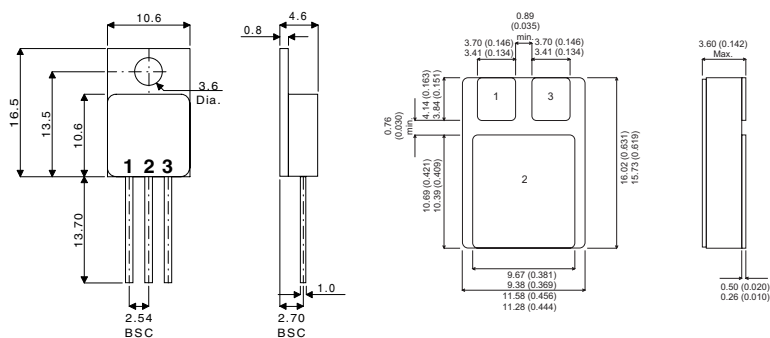


MECHANICAL DATA

Dimensions in mm



TO220 METAL

SMD1
CERAMIC SURFACE MOUNT

**HERMETICALLY SEALED
DUAL FAST RECOVERY
SILICON RECTIFIER
FOR HI-REL APPLICATIONS**

- STANDARD (COMMON CATHODE)
- COMMON ANODE
- SERIES CONNECTION

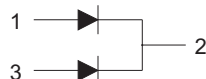
FEATURES

- HERMETIC TO220 METAL OR CERAMIC SURFACE MOUNT PACKAGE
- SCREENING OPTIONS AVAILABLE
- ALL LEADS ISOLATED FROM CASE
- VOLTAGE RANGE 300 TO 500V
- AVERAGE CURRENT 20A
- VERY LOW REVERSE RECOVERY TIME – $t_{rr} = 35ns$
- VERY LOW SWITCHING LOSSES

ELECTRICAL CONNECTIONS

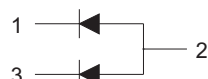
Common Cathode Common Anode Series Connection

BYV34-xxxM



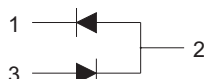
1 = A₁ Anode 1
2 = K Cathode
3 = A₂ Anode 2

BYV34-xxxAM



1 = K₁ Cathode 1
2 = A Anode
3 = K₂ Cathode 2

BYV34-xxxRM



1 = K₁ Cathode 1
2 = Centre Tap
3 = A₂ Anode

Applications include secondary rectification in high frequency switching power supplies.

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)		BYV34 -300M	BYV34 -400M	BYV34 -500M
V_{RRM}	Peak Repetitive Reverse Voltage	300V	400V	500V
V_{RWM}	Working Peak Reverse Voltage	300V	300V	400V
V_R	Continuous Reverse Voltage	300V	300V	400V
I_{FRM}	Repetitive Peak Forward Current $t_p = 10\mu s$		200A	
$I_{F(AV)}$	Average Forward Current $T_{case} = 70^{\circ}C$ (switching operation, $\delta = 0.5$, both diodes conducting)		20A	
I_{FSM}	Surge Non Repetitive Forward Current $t_p = 10 ms$		100A	
T_{stg}	Storage Temperature Range		-65 to 200°C	
T_j	Maximum Operating Junction Temperature		200°C	

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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Issue 1

ELECTRICAL CHARACTERISTICS (per Diode) ($T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_R Reverse Current	$V_R = V_{RWM}$ $T_j = 25^{\circ}\text{C}$			50	μA
	$V_R = V_{RWM}$ $T_j = 100^{\circ}\text{C}$			0.6	mA
V_F * Forward Voltage	$I_F = 20\text{A}$ $T_C = 25^{\circ}\text{C}$			1.7	V
	$I_F = 10\text{A}$ $T_C = 100^{\circ}\text{C}$			1.05	
t_{rr} Reverse Recovery Time	$I_F = 1.0\text{A}$ $V_R = 30\text{V}$ $di / dt = 100\text{A}/\mu\text{s}$			50	ns
Q_{rr} Recovered Charge	$I_F = 2\text{A}$ $V_R = 30\text{V}$ $di / dt = 20\text{A}/\mu\text{s}$			50	nC
V_{Fp} Forward Recovery Overvoltage	$di / dt = 10\text{A}/\mu\text{s}$ $I_F = 10\text{A}$		2.5		V

* Pulse Test: $t_p \leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

THERMAL CHARACTERISTICS (TO220 METAL CASE)

$R_{\theta JC} \dagger$ Thermal Resistance Junction – Case			1.6	$^{\circ}\text{C}/\text{W}$
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\dagger Both diodes conducting.