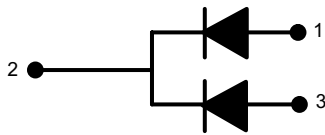
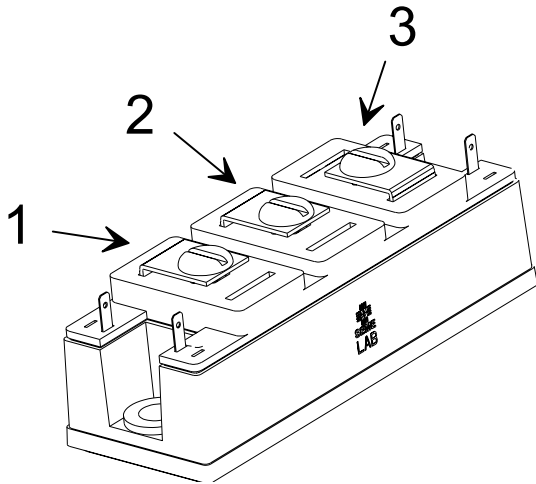


## MECHANICAL DATA

Dimensions in mm (inches)



## Ultrafast Recovery Diode Module 300 Volt, 150 Amp

### TECHNOLOGY

This diode module employs ultrafast technology and offers high speed switching combined with low  $V_f$  and very low EMI. It comes in an E34 package and enables easy connection of multiple devices in standard configurations. Parallel operation is problem-free because Semelab diodes have a positive temperature coefficient of  $V_f$ .

### BENEFITS

- Very fast recovery for low switching losses
- Ultra soft recovery with low EMI generation
- High dynamic ruggedness under all conditions
- Low temperature dependency
- Low on-state losses with positive temperature coefficient
- Stable blocking voltage and low leakage current
- Avalanche rated for high reliability circuit operation

### Key Parameters

$V_R$	(max)	300V
$V_F$	(typ)	1.4V
$I_F$	(max)	150A
$t_{rr}$	(max)	50nS

### APPLICATIONS

- Freewheeling diode in converters and motor control circuits
- Uninterruptible power supplies UPS
- Antiparallel diode for high frequency switching devices
- Inductive heating and melting

## ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C unless otherwise stated)

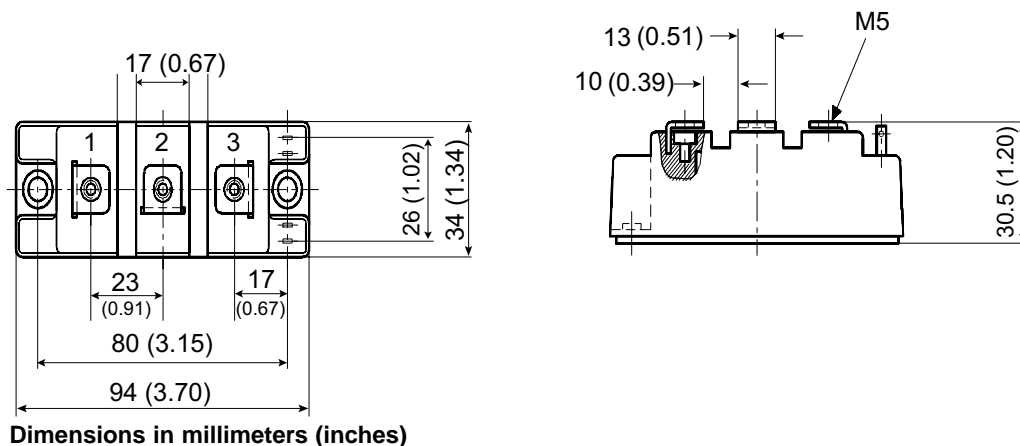
$V_{RRM}$	Peak Repetitive Reverse Voltage	300V
$V_R$	DC Reverse Blocking Voltage	300V
$I_{FAV}$	Average Forward Current @T <sub>C</sub> = 85°C	150A
$I_{FSM(surge)}$	Repetitive Forward Current	400A
$I_{FS(surge)}$	Non-Repetitive Forward Current(10msec pulse)	1500A
$P_D$	Power Dissipation @T <sub>C</sub> = 85°C	220W
$T_J, T_{STG}$	Operating & Storage Junction Temperature	-55 to 150°C

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## ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>STATIC ELECTRICAL CHARACTERISTIC</b>					
V <sub>F</sub> * Forward Voltage Drop	I <sub>F</sub> = 150A T <sub>J</sub> = 25°C		1.4	2	V
	I <sub>F</sub> = 150A T <sub>J</sub> = 125°C		1.45		
	I <sub>F</sub> = 100A T <sub>J</sub> = 25°C		1.2		
I <sub>R</sub> Leakage Current	V <sub>R</sub> = 300V T <sub>J</sub> = 25°C		1	400	μA
	V <sub>R</sub> = 300V T <sub>J</sub> = 125°C		0.7	5	mA
C <sub>T</sub> Junction Capacitance	V <sub>R</sub> = 200V T <sub>J</sub> = 25°C		125		pF
<b>DYNAMIC ELECTRICAL CHARACTERISTIC</b>					
Q <sub>rr</sub> Reverse Recovery Charge	V <sub>R</sub> = 200V I <sub>F</sub> = 150A d <sub>i</sub> / d <sub>t</sub> = 1200A/μs T <sub>J</sub> = 25°C		3.26		μC
I <sub>rr</sub> Reverse Recovery Current			50		A
t <sub>rr</sub> Reverse Recovery Time			260		nsec
Q <sub>rr</sub> Reverse Recovery Charge	V <sub>R</sub> = 200V I <sub>F</sub> = 150A d <sub>i</sub> / d <sub>t</sub> = 1200A/μs T <sub>J</sub> = 25°C		6.34		μC
I <sub>rr</sub> Reverse Recovery Current			76		A
t <sub>rr</sub> Reverse Recovery Time			340		nsec
t <sub>rr</sub> Reverse Recovery Time	V <sub>R</sub> = 50V I <sub>F</sub> = 1A d <sub>i</sub> / d <sub>t</sub> = 200A/μs T <sub>J</sub> = 25°C		100		nsec
<b>THERMAL AND MECHANICAL CHARACTERISTICS</b>					
R <sub>θjc</sub> Junction to Case Thermal Resistance			TBA		°C/W
R <sub>θja</sub> Junction to Ambient Thermal Resistance			TBA		

## Package Outline Drawing



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