



# F18 SERIES

POWER MODULES



## Features

- Industry Standard Package and Circuits
- Power Control Building Blocks
- 8 Circuits to Choose from
- UL Recognized E72445

## SPECIFICATIONS

### Electrical

Description	Symbol	27	42	57	92	107 <sup>(2)</sup>
Maximum DC Output Current (Tc = 85°C)	$I_D$	25 A	40 A	55 A	90 A	150 A
Maximum Voltage Drop @ Amps Peak	$V_f$	1.55V @ 75 A	1.4V @ 120 A	1.4V @ 165 A	1.40V @ 270 A	1.65V @ 300 A
Operating Junction Temperature Range	$T_J$	-40 - 125°C	-40 - 125°C	-40 - 125°C	-40 - 125°C	-40 - 125°C
Critical Rate of Rise of On-State Current @ T <sub>J</sub> =125°C [A/μs]	di/dt	100	100	100	100	100
Critical Rate of Rise of Off-State Voltage [V/μs]	dv/dt	1000	1000	1000	1000	1000
Repetitive Peak Reverse Voltage (AC Line Nominal) [Vpk]	$V_{RRM}$	400 (120 VAC)				
		600 (240 VAC)				
		1000 (380 VAC)				
		1200 (480 VAC)				
		1400 (530 VAC)				
		1600 (600 VAC)				
Maximum Non-Repetitive Surge Current (1/2 Cycle, 60 Hz) [A]	$I_{TSM}$	400	1000	1500	1950	2250
Maximum I <sup>2</sup> t for Fusing (t=8.3ms) [A <sup>2</sup> sec]	I <sup>2</sup> t	670	4150	9350	15800	25000
Maximum Required Gate Current to Trigger @ 25°C [mA]	$I_{GT}$	150	150	150	150	150

<b>Maximum Required Gate Voltage to Trigger @ 25°C [V]</b>	$V_{GT}$	3.0	3.0	3.0	3.0	3.0
<b>Average Gate Power [W]</b>	$P_{G(AV)}$	0.5	0.5	0.5	0.5	0.5
<b>Maximum Peak Reverse Gate Voltage [V]</b>	$V_{GM}$	5.0	5.0	5.0	5.0	5.0
<b>Maximum Thermal Resistance, Junction to Ceramic Base per Chip [°C/W]</b>	$R_{JC}$	0.4	0.28	0.25	0.14	0.135
<b>Isolation Voltage [Vrms]</b>	$V_{ISOL}$	2500	2500	2500	2500	2500

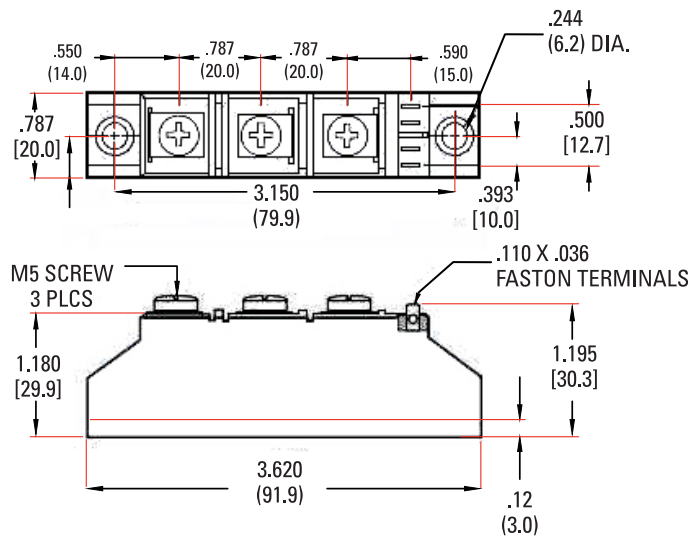
## General

Description	Parameters
<b>Weight (typical)</b>	4.75 oz (135g)
<b>Torque Required</b>	Terminal Stud Screw : 30 lb-in. Mounting Screws : 20 lb-in

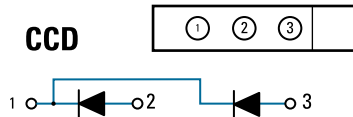
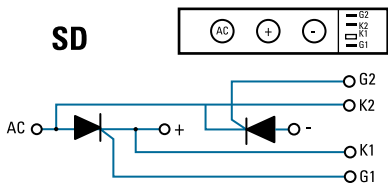
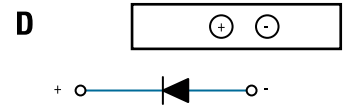
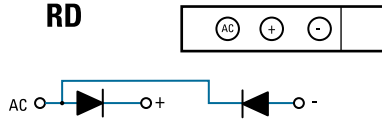
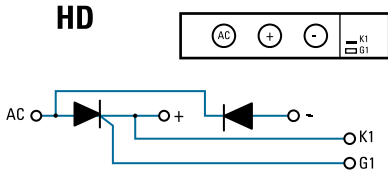
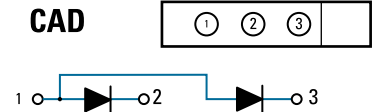
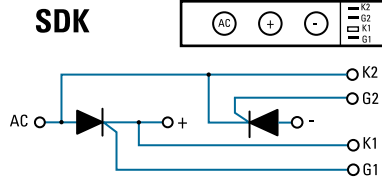
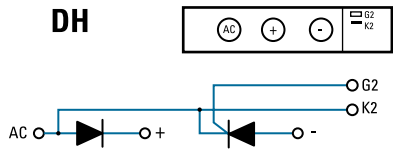
## MECHANICAL SPECIFICATIONS

Tolerance:  $\pm 0.02$  in / 0.5 mm

All dimensions are in: inches [millimeters]



## CIRCUIT DIAGRAMS



## ORDERING OPTIONS

Example : F1892SD1200

	F18	92	SD	1200
<b>Series</b>	[Line connecting F18, 92, SD, 1200]			
<b>F18</b>	[Shaded bar]			
<b>Load Current</b>	[Line connecting F18, 92, SD, 1200]			
27 : 25 Amps	[Shaded bar]			
42 : 40 Amps	[Shaded bar]			
57 : 55 Amps	[Shaded bar]			
92 : 90 Amps	[Shaded bar]			
107 : 105 Amps	[Shaded bar]			
<b>Circuit Type</b>	[Line connecting F18, 92, SD, 1200]			
CAD HD RD D	[Shaded bar]			
CCD DH SDK SD	[Shaded bar]			
<b>Operating Voltage</b>	[Line connecting F18, 92, SD, 1200]			
400 : 120 VAC	[Shaded bar]			
600 : 240 VAC	[Shaded bar]			
1000 : 380 VAC	[Shaded bar]			
1200 : 480 VAC	[Shaded bar]			
1400 : 530 VAC	[Shaded bar]			
1600 : 600 VAC	[Shaded bar]			

Required for valid part number  
 For options only and not required for valid part number

NOTE: Not all combinations are available.  
Consult factory for information on the availability of a specific part number.

## GENERAL NOTES

- (1) All parameters at 25°C and per section unless otherwise specified.
- (2) Available only in HD, RD and SD circuit configuration.

## AGENCY APPROVALS & CERTIFICATIONS



## WARNINGS



### RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

**Failure to follow these instructions can result in serious injury, or equipment damage.**



### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

**Failure to follow these instructions will result in death or serious injury.**

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