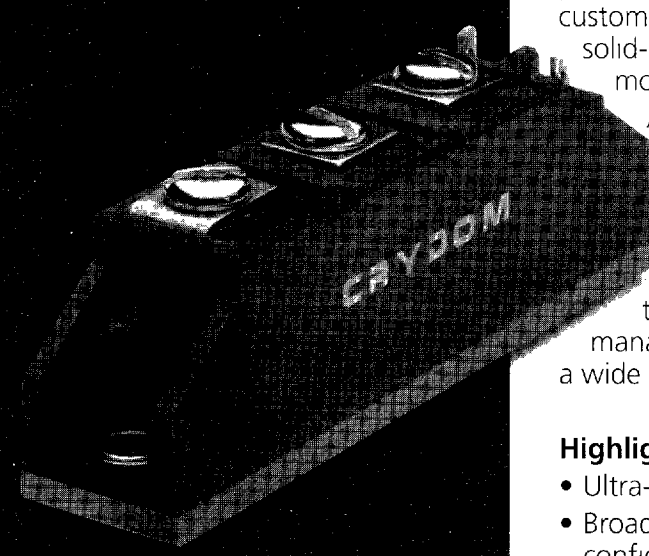


# CRYDOM

## F18 Series Power Modules Ultra-high Surge & Long Life



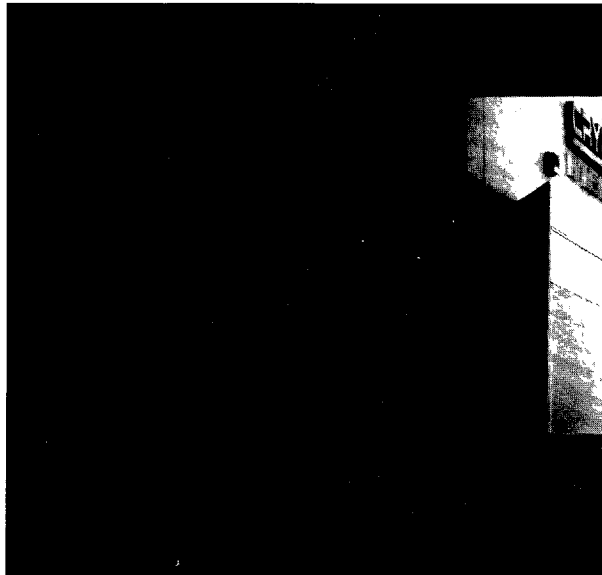
By applying unique expertise in thermal management and functional packaging of power semiconductors, Crydom caters to its customers with an extensive line of innovative solid-state relays, I/O modules, thyristor/diode modules, and custom thick film hybrids.

Among these outstanding products are the F18 Series SCR/diode power modules, which provide ultra-high surge current performance up to 1950 amps, in 25-90 amp ratings. In addition, their unitized power hybrid technology delivers highly efficient thermal management that greatly extends cycle life in a wide variety of applications.

### Highlights include:

- Ultra-high surge current capabilities
- Broad application coverage — 10 standard configurations
- Standard voltages form 600 to 1200 volts, others available
- Average device current output ratings of 25 to 90 amps.
- 2500 VAC RMS terminal-to-base isolation
- UL component recognition
- Assured highest quality — all units are 200% tested

# CRYDOM



## Leadership

Crydom maintains its worldwide leadership position through strategic utilization of modern, world-class production facilities. No newcomer to cost-effective offshore manufacturing, Crydom first established its own Maquiladora facility in

Tijuana, Mexico, just across the border from San Diego, in 1972. The plant shown here is our new 90,000 square-foot, state-of-the-art facility that came on-stream in 1990 and is planned to serve our customers well into the 21st Century.

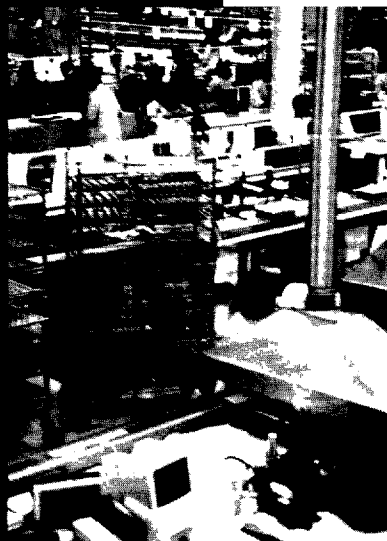
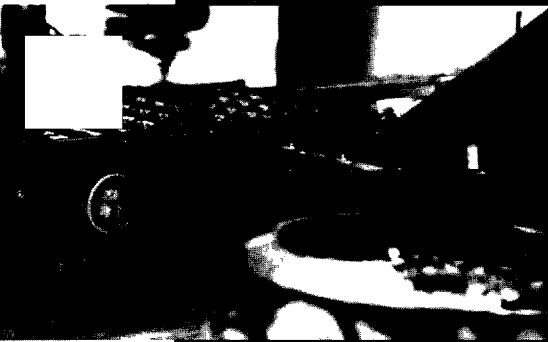
## Responsiveness

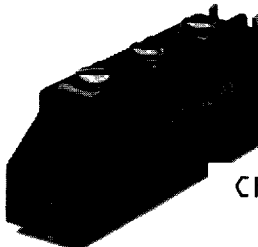
Crydom exists for one reason: to serve its customers in every way possible. Through the extensive use of surface mount technology, robotic assembly and continuous flow manufacturing and testing techniques, Crydom has the installed capacity to serve the present and future market needs of its worldwide customer base. Equally important, computer-aided planning and scheduling systems enable us to meet the most demanding JIT requirements for as-required delivery.

## Performance

Because our customers expect impeccable performance, Crydom observes the highest standards of quality assurance, employing SPC methods as just one of many tools to assure the utmost in quality and long-term reliability. To facilitate our customers' ability to serve international markets, Crydom products can be supplied with a variety of agency approvals including UL, CSA, VDE and others.

Crydom products are available locally throughout the world. Call toll-free for details and your local distributor: 1-800-8 CRYDOM.





# F18 Series Power Modules

## Performance Characteristics

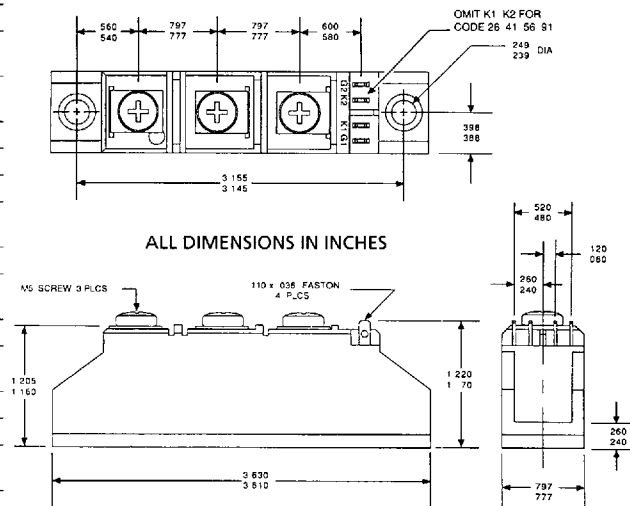
CRYDOM CO

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PARAMETER	SYM.	UNITS	SPECIFICATION LIMITS				CONDITIONS
Average Output Current per device	$I_o$	A	25	40	55	90	$T_c=85^\circ\text{C}$
One-Cycle Surge Current (Peak)	$I_{SM}$		400	1000	1500	1950	$T_j=125^\circ\text{C}$ Non-Repetitive
$I^2t$ for Fusing (Max)	$I^2t$	A <sup>2</sup> S	670	4150	9350	15,800	$t=8$ 3ms
Rate-of-Rise of On-State Current (Max)	$di/dt$	A/ $\mu\text{S}$	100				
Rate-of-Rise of Off-State Voltage (Max)	$dv/dt$	V/ $\mu\text{S}$	500				Exponential Rise to 80% $V_{ORM}$ , Gate Open Circuit, $T_c=125^\circ\text{C}$
Reverse Blocking Voltage (Max)	$V_{RRM}$	V	600-1400*				$T_j=125^\circ\text{C}$
Leakage Current (Max)	$I_{RM}$	mA	20				$T_j=125^\circ\text{C}$ at Rated Voltage
Isolation Voltage (Min)	$V_{ISL}$	Vrms	2500				Any Terminal-to-Base
Junction Operating and Storage Temperature Range	$T_j$ & $T_{STG}$	$^\circ\text{C}$	-40 to +125				
Thermal Resistance	$R_{CS}$	$^\circ\text{C}/\text{W}$	0.1				With Thermal Grease
Thermal Resistance (Junction-to-Case)	$R_{CJ}$	$^\circ\text{C}/\text{W}$	0.40	0.30	0.25	0.15	Per Module
Forward Gate Current (Peak)	$I_{FGM}$	A	10				
Gate Current Required to Fire all Devices (Max)	$I_{GT}$	mA	150				$V_o=6\text{V}$
Forward Gate Voltage (Peak)	$V_{FGM}$	V	30				
Reverse Gate Voltage (Peak)	$V_{RGM}$	V	5				
Gate Voltage Required to Fire all Devices (Max)	$V_{GT}$	V	3				$V_o=6\text{V}$
Latching Current (Max)	$I_L$	mA	500				
Holding Current (Max)	$I_H$	mA	300				
Gate Power (Peak)	$P_{GM}$	W	50				10 $\mu\text{s}$ Pulse
Case Style			F18				See below for circuit configurations and outline dimensions

### OUTLINE/MOUNTING DIMENSIONS

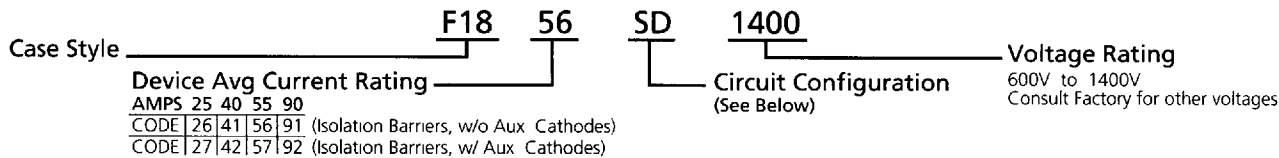


### MOUNTING TORQUE REQUIRED:

- (A) Mounting Screws 20 in -lbs
- (B) Terminal Studs 30 in -lbs (Screws supplied, unmounted)

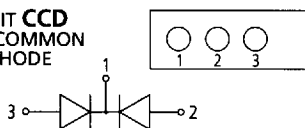
\*Consult factory for other voltages All conditions are at 25°C unless noted

### PART NUMBER DESIGNATION CODE

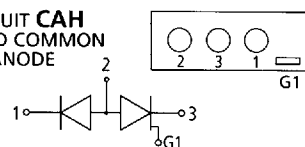


### CIRCUIT CONFIGURATIONS

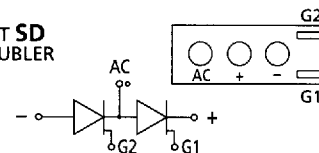
CIRCUIT CCD  
DIODE/Common  
CATHODE



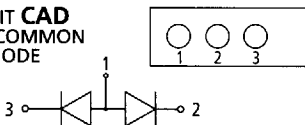
CIRCUIT CAH  
HYBRID COMMON  
ANODE



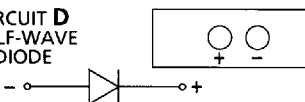
CIRCUIT SD  
SCR DOUBLER



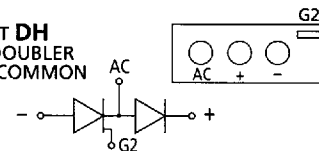
CIRCUIT CAD  
DIODE/Common  
ANODE



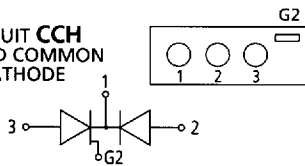
CIRCUIT D  
HALF-WAVE  
DIODE



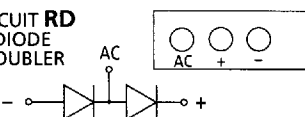
CIRCUIT DH  
HYBRID DOUBLER  
CATHODE COMMON



CIRCUIT CCH  
HYBRID COMMON  
CATHODE



CIRCUIT RD  
DIODE  
DOUBLER



CIRCUIT HD  
HYBRID DOUBLER  
ANODE COMMON

