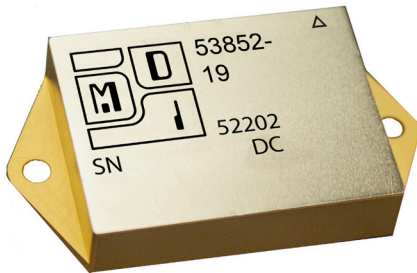


# -195°C TO +125°C OPERATION

## Rad Hard 100k+ 600V/10A Solid State Relay

### MODELS 53852/53853



**For Space or Cryogenic Operation**

**Features:**

- Operates from -195°C to +125°C
- High Voltage/Low Resistance
- Single Pole, Single Throw available in Form A or Form B
- Wide Band Gap Semiconductors for low Resistance
- No SEE LET>82MeV\*cm<sup>2</sup>/mg
- 100K+ Rad Hard TID 100 kRads (S and SE Grades)
- TID 45 Krads (L and LE Grades)
- Magnetically Coupled Command for fast response
- No Optocoupler, no optocoupler issues
- 5 VDC "Coil"
- Rugged Hermetic Package

**Specifications:**

Command Input Voltage 4.75 to 5.25VDC

Command input current 10 mA typical, 25 mA maximum

Input/output and all pins to case isolation 1kV at maximum rated case temperature

Case temperature range:

Operating -195°C to +85°C (L or S grade)

Operating -195°C to +125°C (LE or SE grade)

Operating -195°C to +55°C (EU Grade)

Storage -195°C to +150°C

Weight 32 grams typical

Apply +5VDC to pin 3 to energize the SSR

Power Dissipation:

Total steady state power dissipation of the unflanged model 53852 and 53853 is limited to 6 watts. The flanged package is rated at 8 watts.

Model 53852 is a form B (normally closed when de-energized) solid state relay rated at 10A and up to 600 VDC. The availability of normally closed function with these ratings unique to MDI.

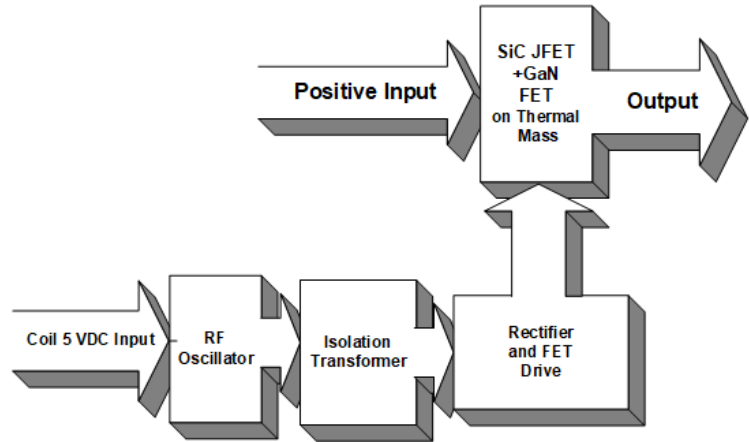
Model 53853 is a form A (normally open when de-energized) solid state relay rated at 10A and up to 600 VDC.

Although the output section is rated at 600V, the low on resistances of the 53852 and the 53853 allow them to be practically used at much lower application voltages.

Control input to output isolation is magnetically coupled and the 5 VDC control section requires less than 250mW of bias power.

These SSR's are packaged in a hermetically sealed case able to withstand severe environments. The units are available with and without a mounting flange.

The SSR's are available in Engineering unit, (L & LE) and Space (S & SE) operating and screening grades.



600V/10A Solid State Relay				
Model 53852 Form B				
Model 53853 Form A				
PARAMETER	CONDITION	MIN	TYP	MAX
Contact Rating V	Max	—	—	1000V
Contact Rating I	Max	—	—	15A
Contact Rating V	Continuous	—	—	600V
Contact Rating I	Continuous	—	—	10A
Contact Resistance, 25°C	Energized	—	0.15Ω	0.2Ω
Contact Resistance, 125°C	Energized	—	0.3 Ω	0.4 Ω
Leakage Current, 1000V, 25°C	Off	—	—	30μA
Leakage Current, 1000V, 125°C	Off	—	—	60μA
Bias Voltage	—	4.75V	5.0V	5.25V
Bias Current	—	—	10mA	25mA
Delay Time, Energized	—	—	30μS	60μS
Delay Time, De-Energized	—	—	30μS	60μS
Energize Time, Dynamic	—	—	10μS	30μS
De-Energize Time, Dynamic	—	—	10μS	30μS
Temperature, Operating	Case	-195°C	—	125°C LE & SE Grade
Temperature, Operating	Case	-195°C	—	85°C L & S Grades
Temperature, Operating	Case	-195°C	—	85°C EU Grade
Temperature, Storage	Case	-195°C	—	150°C
Weight	Case	—	—	45 grams



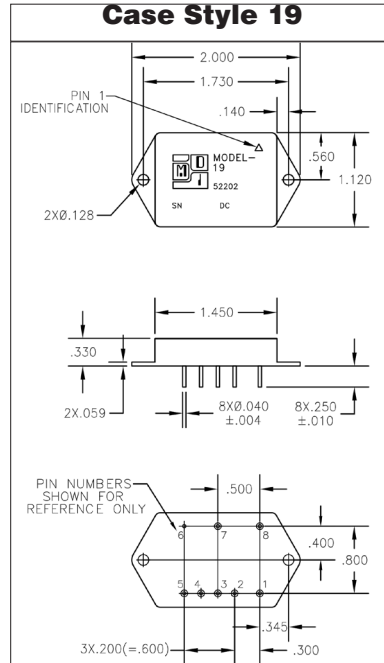
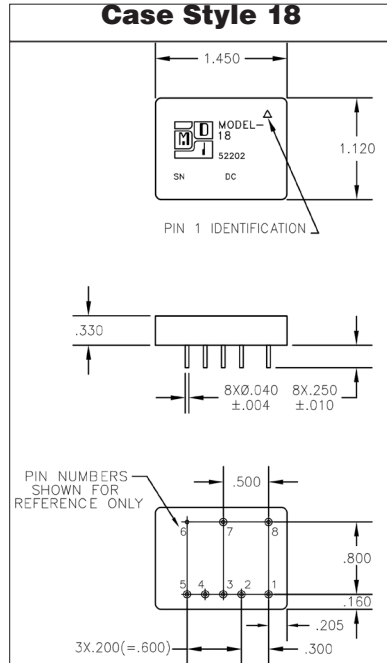
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Power Conversion for Space and Military/Aerospace

For Heat Removal and Mounting Recommendations See MDI application notes on mounting considerations for DC-DC Converters.

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# 53852/53853

**-195°C - +125°C Rad Hard 100k+ 600V/10A Solid State Relay**



Pin Out Chart	
Pin 1	Command Return
Pin 2	N/C
Pin 3	Command (+5V)
Pin 4	N/C
Pin 5	N/C
Pin 6	Case
Pin 7	Switch Positive
Pin 8	Switch Negative

Pin Out Chart	
Pin 1	Command Return
Pin 2	N/C
Pin 3	Command (+5V)
Pin 4	N/C
Pin 5	N/C
Pin 6	Case
Pin 7	Switch Positive
Pin 8	Switch Negative

Model No.	Case Style	Pin Count	Mounting
53852/53853 -	18	8	Seam Weld Flangeless PCB Mount
53852/53853 -	19	8	Seam Weld PCB Mount with Flange

**GRADE LEVELS:**

Please specify grade level for your application. EU grade units will be shipped if no option is specified.

- |           |                               |           |                                |
|-----------|-------------------------------|-----------|--------------------------------|
| <b>EU</b> | Engineering Units             | <b>S</b>  | 100K+™, -195°C to +85°C Space  |
| <b>L</b>  | 45K, -195°C to +85°C Military | <b>SE</b> | 100k+™, -195°C to +125°C Space |
| <b>LE</b> | 45K, -195°C to +125°C Space   |           |                                |



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