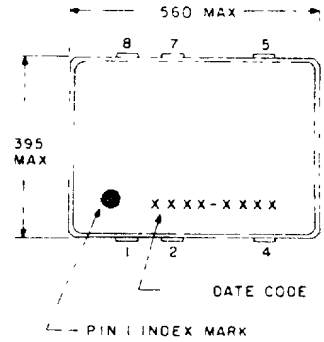
53100/53101/53102/53103
SPST SOLID - STATE RELAY

T-25-31

MILITARY SPST SOLID STATE RELAYS
MII P/N's - 53100/53101/53102/53103

FEATURES:

- Replacement for CD21CD, CD20CD, CD01CF & CD00CF SPST, Normally Open
- TTL and CMOS Compatible Control
- Available with Control Status Input
- Available with Short Circuit & Current Overload Protection
- Power FET Output
- Low On-State Resistance
- Built & Tested to MIL-R-28750
- Available to the "W" & "Y" Level Screening to MIL-R-28750



GENERAL DESCRIPTION

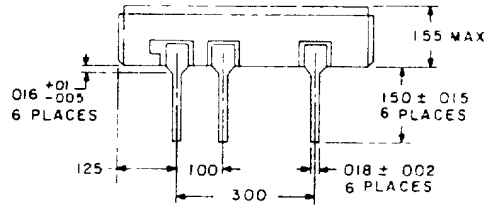
These lightweight devices are resistant to damage from shock and vibration.

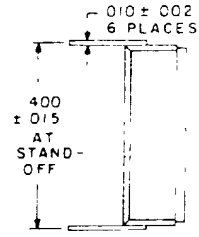
Effective isolation of 1000V AC RMS between the input and output stages is achieved through the use of optical coupling. Power FET outputs eliminate bipolar offset and minimize out put voltage drop for high current capability.

The control input logic may be driven by either CMOS or TTL logic circuits.

Integral short circuit/overload protection is an option. The device senses excessive current flow during switching or normal operating conditions and responds by opening the output. This feature prevents damage to the solid state relay and the system wiring.

Second option is a status output. This features checks the input of the relay and provides a logic 0 (low) when the input circuit is turned on, the status output will go to a logic 1 (high) if a failure occurs in the input circuit. Both options are available either together or separately as standard features.





PART NUMBER	RELAY
53100	1.2A/60V with short circuit protection and control status output
53101	1.2A/60V with short circuit protection
53102	2.0A/60V with control status
53103	2.0A/60V basic Solid State Relay

* Available in W or Y level screening per MIL-R-28750.

ABSOLUTE MAXIMUM RATINGS

Isolation Voltage	1000 VAC RMS
Operating Temperature	-55°C to +105°C
Storage Temperature	-55°C to +125°C

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ELECTRICAL SPECIFICATIONS

(-55°C TO 105°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED)

INPUT (CONTROL) CHARACTERISTICS	MIN	TYP	MAX	UNITS
Input Current @ V_{BIAS} = 5 Vdc		14	16	mA dc
Turn Off Voltage (Guaranteed Off)			1.5	Vdc
Turn On Voltage (Guaranteed On)	3.8			Vdc
Reverse Voltage Protection			-32	Vdc
Input Supply Range	3.8		6	Vdc

INPUT (CONTROL) CHARACTERISTICS	MIN	TYP	MAX	UNITS
Control Current $V_{CONTROL}$ = 5 Vdc			250	µA dc
$V_{CONTROL}$ = 18Vdc			1	mA dc
Control Voltage Range	0		18	Vdc
Bias Supply Voltage Range	3.8		6	Vdc
Bias Supply Current		14	16	mA dc
Turn Off Voltage (Guaranteed Off)	3.2			Vdc
Turn On Voltage (Guaranteed On)			0.3	Vdc

OUTPUT (LOAD) SPECIFICATIONS VCC = 5V, unless otherwise specified	MIN	TYP	MAX	UNITS
Continuous Load Current @ 25°C			1.2 2.0	Adc
Leakage Current @ V_{LOAD} = 60 Vdc			40	µA dc
Output Voltage Drop			0.75	Vdc
Continuous Operating Load Voltage			60	Vdc
Transient Blocking Voltage			80	Vdc
ON Resistance Rds (on) at T_J = 25°C		0.36	0.45	
I_{LOAD} = 100 mA dc		0.16	0.22	Ohms
Turn - On Time			1.5	ms
Turn - Off Time			0.25	ms
Dielectric Strength	1000			Vac
Insulation Resistance @ 500 Vdc	10			Ohms
Output Junction Temperature @ I_{LOAD} = maximum rated current			125	°C
Maximum Junction Temperature T_J (max)			150	°C

STATUS OUTPUT (53100 AND 52102)		
CONTROL VOLTAGE	OUTPUT (LOAD) STATE	STATUS OUTPUT LEVEL
High	Off	High (Vso = Vstatus)
Low	On	Low (Vso < 0.3 Vdc)