



## DESCRIPTION

The M250 is a bi-directional, single-pole, single-throw, normally open multipurpose solid-state relay in a 4-pin miniature small outline package. It is designed to replace electromechanical and reed relays in special applications that call for very fast switching rates. The relay consists of an integrated circuit that drives two special source-to-source enhancement type DMOS transistors with extremely low output capacitance and leakage current. The IC is optically coupled to a light emitting diode which controls its switching. The design of the circuit makes it ideal for switching high frequency signals.

## FEATURES

- High input-to-output isolation
- Low input control power consumption
- 35mA maximum continuous load current
- 300 ohms maximum on-resistance
- Long life/high reliability
- Fast switching speeds
- Low output capacitance
- Ultra miniature 4-pin small outline package

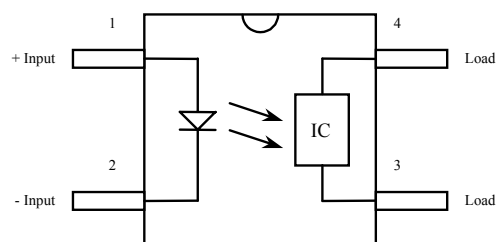
## APPLICATIONS

- Telecom switching
- Tip/Ring control
- PCMCIA modules
- Multiplexers
- Meter reading systems
- Data acquisition
- Medical equipment
- Battery monitoring
- Home/Safety security systems

## OPTIONS/SUFFIXES

- -TR Tape and Reel

## SCHEMATIC DIAGRAM



## MAXIMUM RATINGS

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-55		125
Operating Temperature	°C	-40		85
Continuous Input Current	mA			40
Transient Input Current	mA			400
Reverse Input Control Voltage	V	6		
Output Power Dissipation	mW			400

## APPROVALS

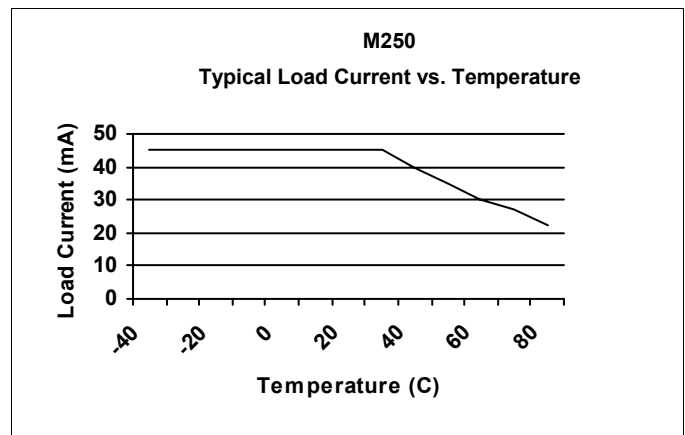
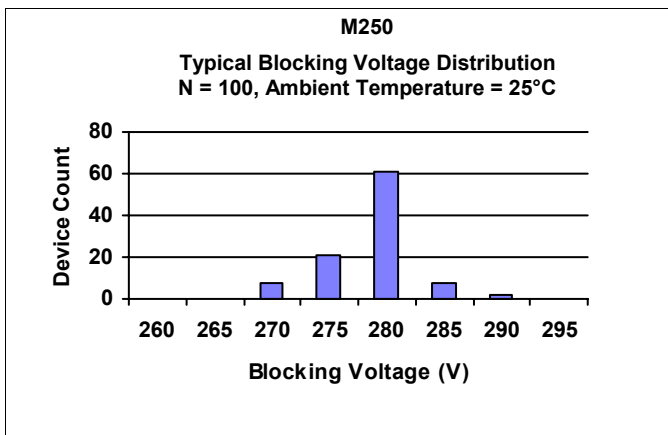
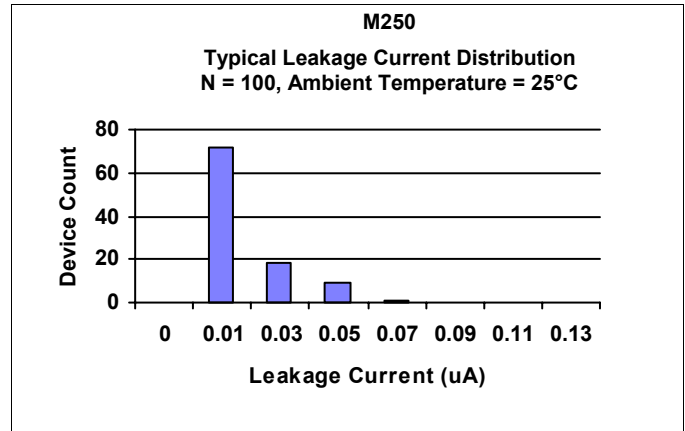
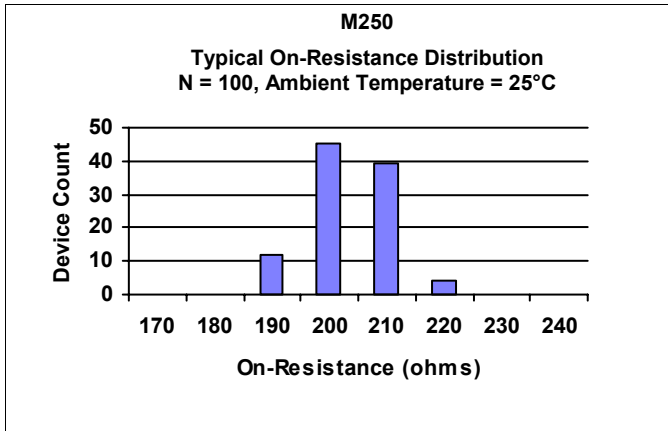
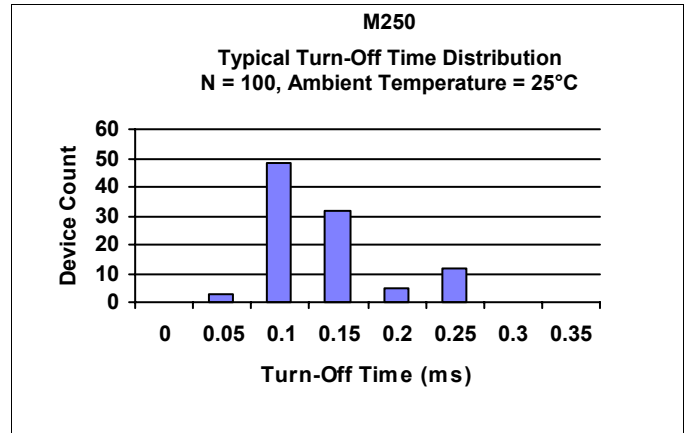
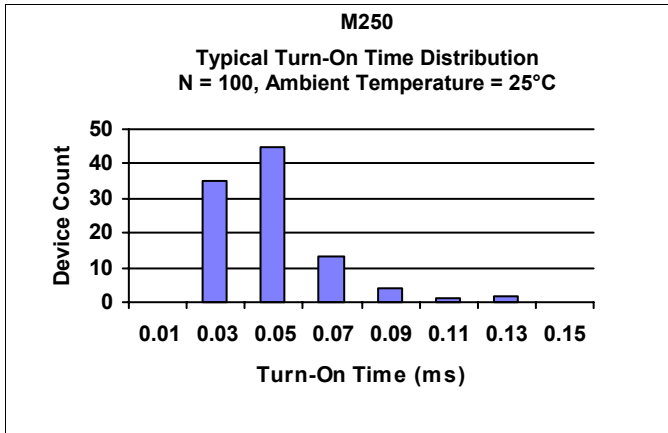
- BAPT CERTIFICATE #650192:  
BS EN 60950, BS EN 41003, BS EN 60065


**ELECTRICAL CHARACTERISTICS - 25°**

PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
<b>INPUT SPECIFICATIONS</b>					
LED Forward Voltage	V		1.2	1.5	I <sub>f</sub> = 10mA
LED Reverse Voltage	V	6	12		I <sub>r</sub> = 10uA
Turn-On Current	m A	5	2.5		I <sub>o</sub> = 35mA
Turn-Off Current	m A		0.5		
<b>OUTPUT SPECIFICATIONS</b>					
Blocking Voltage	V	250			I <sub>o</sub> = 1uA
Continuous Load Current	m A			35	I <sub>f</sub> = 5mA
On-Resistance	Ω		225	300	I <sub>o</sub> = 35mA
Leakage Current	n A		10	100	V <sub>o</sub> = 250V
Output Capacitance	p F		1.5	3	V <sub>o</sub> = 25V, f = 1.0MHz
Offset Voltage	m V			0.2	I <sub>f</sub> = 5mA
<b>COUPLED SPECIFICATIONS</b>					
Isolation Voltage	V	1500			T = 1 minute
Turn-On Time	μ s		50	500	I <sub>f</sub> = 5mA, I <sub>o</sub> = 35mA
Turn-Off Time	μ s		150	500	I <sub>f</sub> = 5mA, I <sub>o</sub> = 35mA
Isolation Resistance	G Ω	100			
Coupled Capacitance	p F		3		
Contact Transient Ratio	V / μ s	2000	7000		dV = 50V



PERFORMANCE DATA

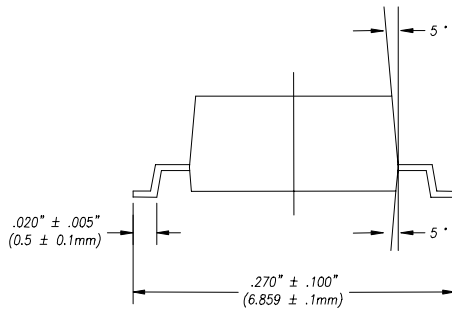




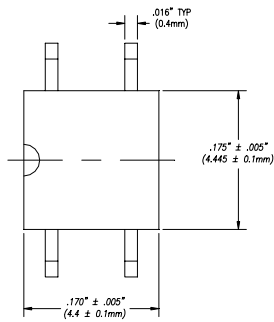
1 Form A  
Solid State Relay

**MECHANICAL DIMENSIONS**

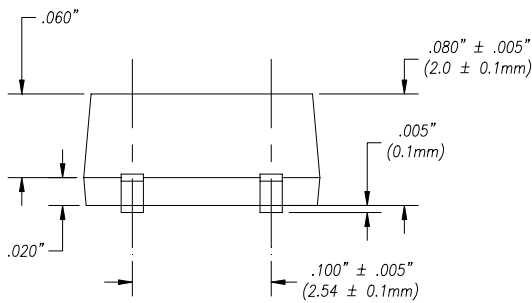
**4 PIN SMALL OUTLINE PACKAGE**



**END VIEW**



**TOP VIEW**



**BACK VIEW**