



DESCRIPTION

The TR125 is a dual function circuit designed specifically as a telecommunications switch. It has an optically isolated solid state relay function that is separated from its transistor output detector function. The relay portion is composed of an LED on the input which is optically coupled to a sensing circuit which drives two back-to-back DMOS transistors. The detector circuit is composed of two back-to-back LEDs that drive an output photo-transistor.

FEATURES

- Bi-directional solid state switch
- FCC compatible
- Bi-directional detector circuit
- Flat package, .090" (2.286) typical package height
- Fits most PCMCIA applications
- Very low control current

APPLICATIONS

- Telecom tip / ring circuits
- Ring Detect
- Modem Switching (PCMCIA cards)
- Hookswitch
- Dial pulsing
- Ground start
- Loop detect

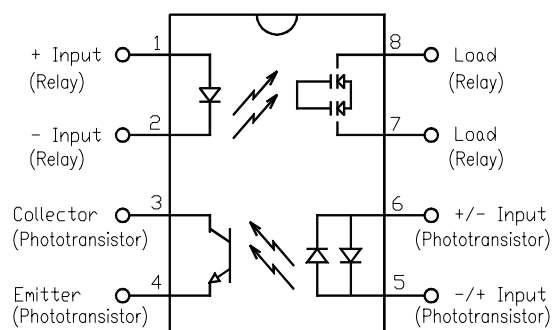
OPTIONS / SUFFIXES

- -F Flat Pack Option
- -H High Output Isolation
- -S Surface Mount Option
- -TR Tape and Reel

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	6.0	-	-
Blocking Voltage	V	-	-	± 400
Output Power Dissipation	mW	-	-	500

SCHEMATIC DIAGRAM



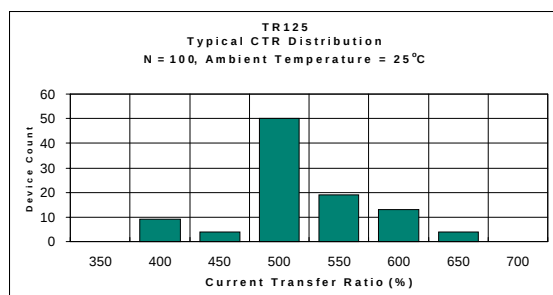
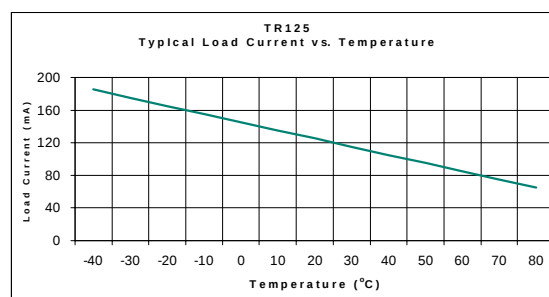
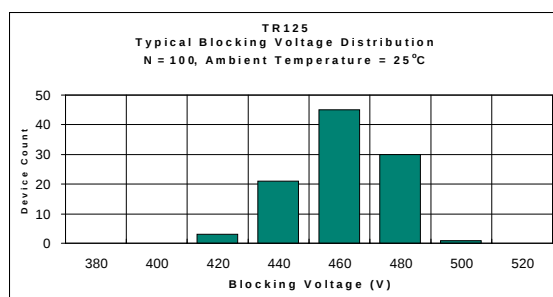
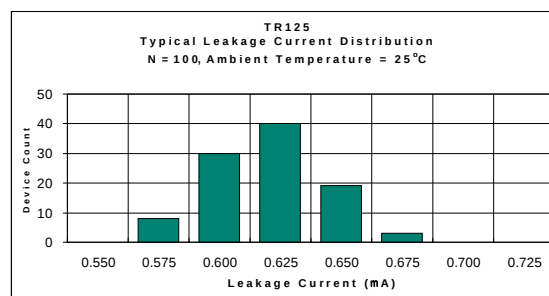
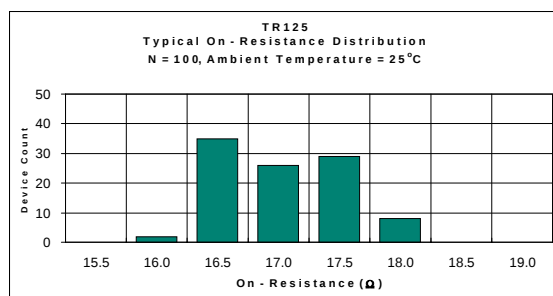
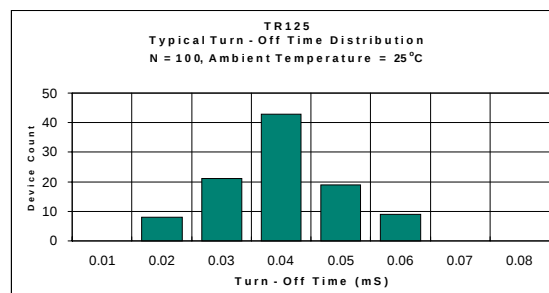
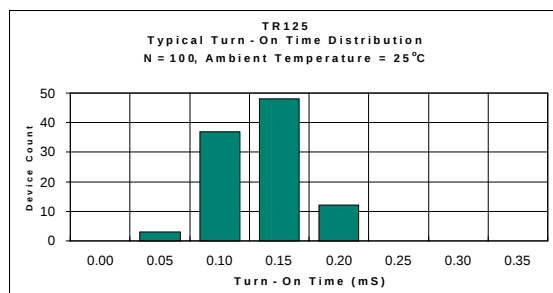
APPROVALS

- BABT CERTIFICATE # 607835:
BS EN 60950, BS EN 41003, BS EN 60065
- CSA CERTIFICATE # LR 111581-1
- UL FILE # E90096

ELECTRICAL CHARACTERISTICS - 25°C

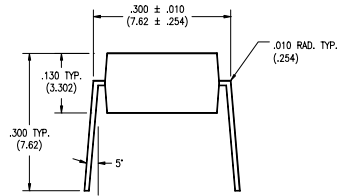
PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
RELAY INPUT SPECIFICATIONS					
LED Forward Voltage	V	-	1.2	1.5	$I_f = 10\text{mA}$
LED Reverse Voltage	V	6.0	12	-	$I_r = 10\mu\text{A}$
Turn-On Current	mA	-	2.5	5.0	-
Turn-Off Current	mA	-	0.5	-	-
RELAY OUTPUT SPECIFICATIONS					
Blocking Voltage	V	-	-	400	$I_o = 10\mu\text{A}$
Continuous Load Current	mA	-	-	120	$I_{in} = 5.0\text{mA}$
On-Resistance	Ω	-	17	20	$I_o = 120\text{mA}$
Leakage Current	μA	-	0.7	2.0	$V_o = 400\text{V}$
Output Capacitance	pF	-	25	50	$V_o = 25, f = 1.0\text{ MHz}$
Offset Voltage	mV	-	-	0.2	$I_{in} = 5.0\text{mA}$
DETECTOR INPUT SPECIFICATIONS					
LED Forward Voltage	V	-	1.2	1.5	$I_f = 10\text{mA}$
Turn-On Current	mA	-	-	0.5	-
DETECTOR OUTPUT SPECIFICATIONS					
Breakdown Voltage	V	-	-	60	$I_c = 10\mu\text{A}$
Leakage Current	nA	-	-	500	$V_{CE} = 20\text{V}$
Collector - Emitter Capacitance	pF	-	6.0	-	$V_{CE} = 0\text{V}, f = 1.0\text{kHz}$
Saturation Voltage	V	-	-	0.5	$I_f = 20\text{mA}$
Current Transfer Ratio	%	300	500	1000	$I_f = 2.0\text{mA}, V_{CE} = 5.0\text{V}$
COUPLED SPECIFICATIONS					
Isolation Voltage -H Suffix	V	2500 3750	-	-	$T = 1\text{ Minute}$
Turn-On Time	mS	-	0.3	1.0	$I_f = 5.0\text{mA}, I_o = 120\text{mA}$
Turn-Off Time	mS	-	0.15	0.5	$I_f = 5.0\text{mA}, I_o = 120\text{mA}$
Isolation Resistance	Ω	10^{11}	-	-	-
Coupled Capacitance	pF	-	-	2.0	-
Contact Transient Ratio	V/ μS	2000	7000	-	$dV = 50\text{V}$

PERFORMANCE DATA

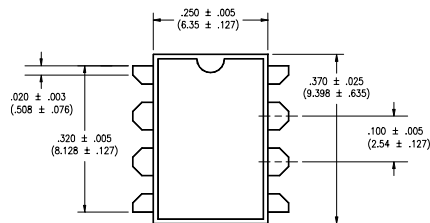


MECHANICAL DIMENSIONS

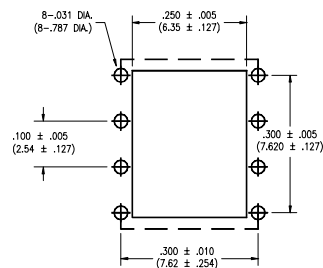
8 PIN DUAL IN-LINE PACKAGE



END VIEW

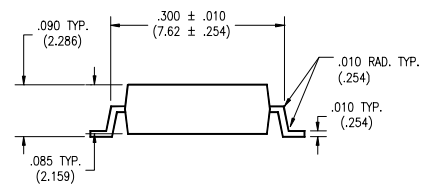


TOP VIEW

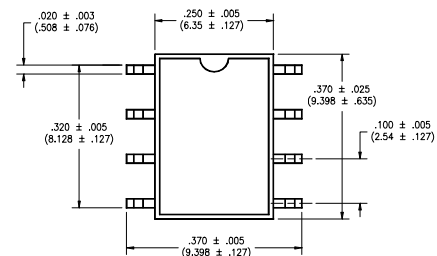


BOTTOM VIEW /
BOARD PATTERN

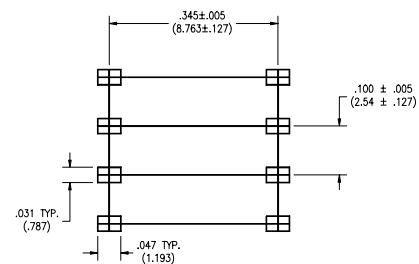
8 PIN FLATPACK



END VIEW



TOP VIEW



BOTTOM VIEW /
BOARD PATTERN