



DESCRIPTION

The SP541-X is a single-pole, single-throw, normally open multipurpose DC solid-state relay. It is designed to replace electromechanical relays in critical applications that require fast switching and solid state reliability. The relay consists of an integrated circuit that drives an enhancement type DMOS transistor. The integrated circuit is optically coupled to a light emitting diode. A 300-ohm input resistor in series with the LED is also provided in this circuit.

FEATURES

- High input-to-output isolation
- Low input control power consumption
- 1.1A maximum continuous load current
- 1 ohm maximum on-resistance
- Long life/high reliability

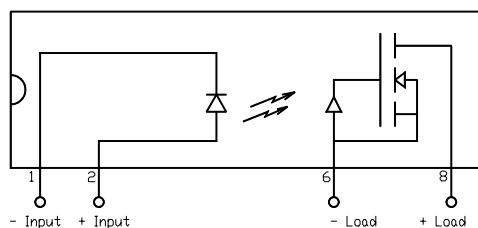
APPLICATIONS

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

OPTIONS/SUFFIXES

- -H High Output Isolation
- -TR Tape and Reel

SCHEMATIC DIAGRAM



MAXIMUM RATINGS

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-55		120
Operating Temperature	°C	-40		85
Continuous Input Current	mA			40
Transient Input Current	mA			400
Reverse Input Control Voltage	V	6		
Output Power Dissipation	W			1.2

APPROVALS

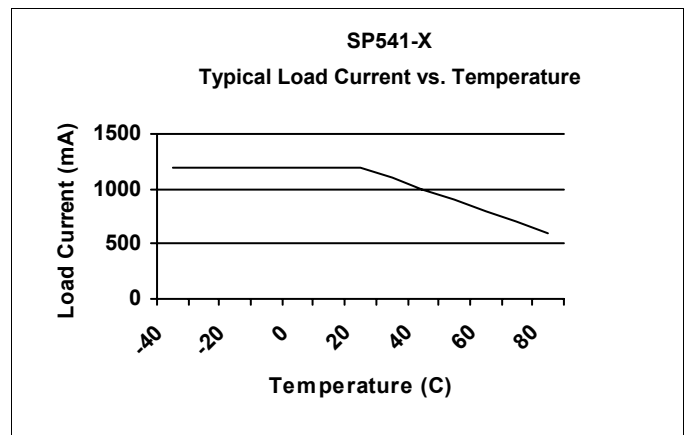
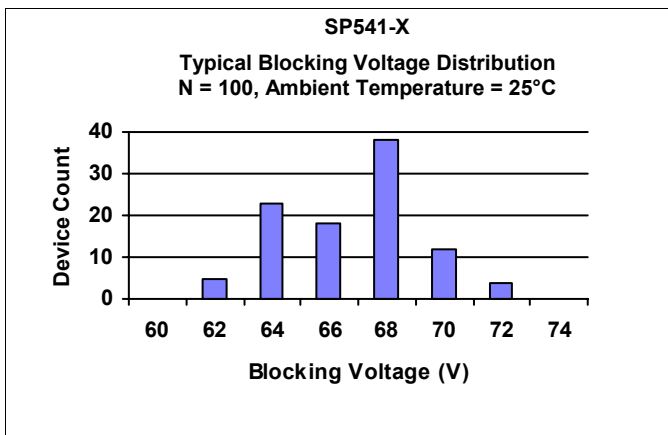
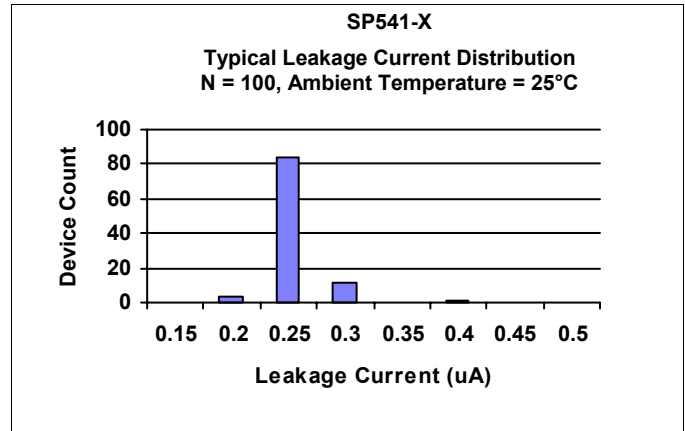
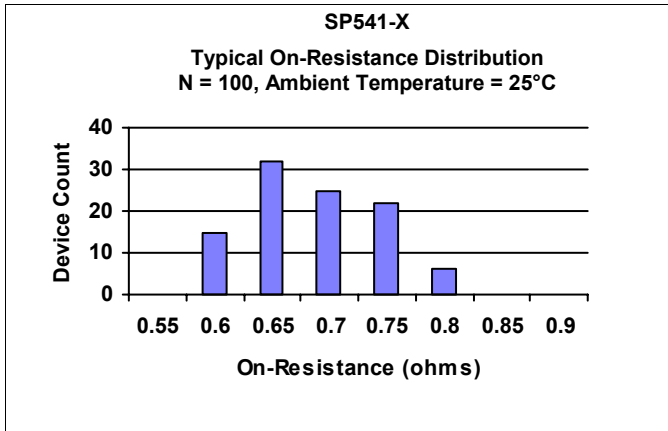
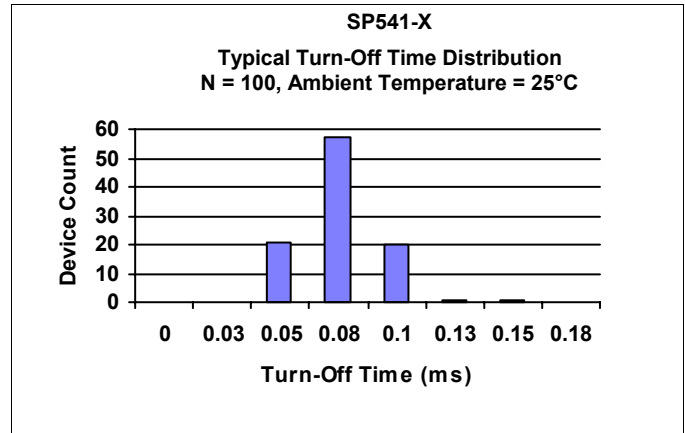
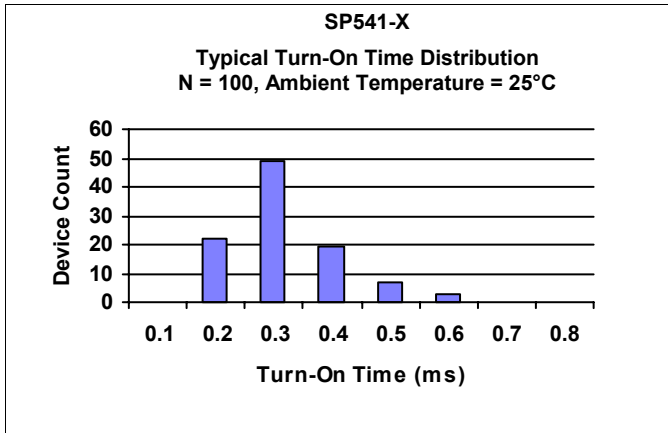
- CSA CERTIFICATE #LR 111581-1
- UL FILE #E90096


ELECTRICAL CHARACTERISTICS - 25°

PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
LED Forward Voltage	V		1.2	1.5	If = 10mA
LED Reverse Voltage	V	6	12		Ir = 10uA
Input Resistor	Ω		300		
Turn-On Current	m A	5	2.5		Io = 1.1A
Turn-Off Current	m A		0.5		
OUTPUT SPECIFICATIONS					
Blocking Voltage	V	60			Io = 10uA
Continuous Load Current	A			1.1	If = 5mA
On-Resistance	Ω		0.7	1	Io = 1.1A
Leakage Current	μ A		0.2	10	Vo = 60V
Output Capacitance	p F		25	50	Vo = 25V, f = 1.0MHz
Offset Voltage	m V			0.2	If = 5mA
COUPLED SPECIFICATIONS					
Isolation Voltage	V	2500			T = 1 minute
-H Suffix	V	3750			T = 1 minute
Turn-On Time	m s		0.5	1	If = 5mA, Io = 1.1A
Turn-Off Time	m s		0.1	0.5	If = 5mA, Io = 1.1A
Isolation Resistance	G Ω	100			
Coupled Capacitance	p F		3		
Contact Transient Ratio	V / μ s	2000	7000		dV = 50V



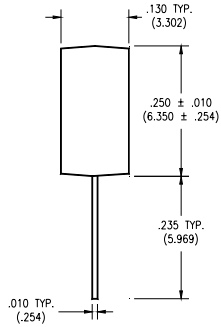
PERFORMANCE DATA



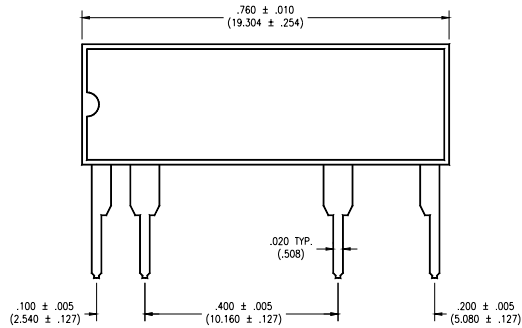


MECHANICAL DIMENSIONS

16 PIN SINGLE IN-LINE PACKAGE



END VIEW



SIDE VIEW