

Optoisolator

1CH DC TRIAC SMD-6

OPI150DCTEL3053

MERITEK

FEATURE

- Random-Phase TRIAC Driver Optoisolator
- Peak Breakdown Voltage: 600V
- Isolation Voltage: 5000 Vrms
- Application: AC Motor Controls, Lighting Controls, Temperature Controls, Solid State Relays, Static Power Switches, Solenoids/Valve Controls
- In Accordance with Safety Class UL1577 Standard



MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Input Forward Current		I_F	60	mA
Input Reverse Voltage		V_R	6	V
Input Power Dissipation	$T_A=25^{\circ}\text{C}$	P_I	100	mW
	Derating Factor (above $T_A=85^{\circ}\text{C}$)		3.8	mW/ $^{\circ}\text{C}$
Output Power Dissipation	$T_A=25^{\circ}\text{C}$	P_C	300	mW
	Derating Factor (above $T_A=85^{\circ}\text{C}$)		7.4	mW/ $^{\circ}\text{C}$
Output Off-State Terminal Voltage		V_{DRM}	600	V
Output Peak Repetitive Surge Current	PW=100 μs , 120pps	I_{TSM}	1	A
Output On-State RMS Current		$I_{\text{T(RMS)}}$	100	mA
Isolation Voltage	AC for 60sec, RH40~60%	V_{ISO}	5000	V_{RMS}
Total Power Dissipation		P_T	330	mW
Operating Temperature Range		T_{Opr}	-55~+100	$^{\circ}\text{C}$
Storage Temperature Range		T_{Stg}	-55~+125	$^{\circ}\text{C}$
Soldering Temperature	10 seconds Max.	T_{SOL}	260	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

Input Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Forward Voltage	$I_F=10\text{mA}$	V_F	--	1.18	1.5	V
Reverse Current	$V_R=6\text{V}$	I_R	--	--	10	μA
Output Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Peak Blocking Current	$V_{\text{DRM}}=\text{Rated } V_{\text{DRM}}, I_F=0\text{mA}$	I_{DRM}	--	--	100	nA
Peak On-State Voltage	$I_{\text{TM}}=100\text{mA Peak}, I_F=\text{Rated } I_{\text{FT}}$	V_{TM}	--	--	2.5	V
Critical Rate of Rise of Off-State Voltage	$V_{\text{PEAK}}=400\text{V}, I_F=0$	dv/dt	1000	--	--	V/ μs
Coupled Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
LED Trigger Current	Main Terminal Voltage=3V	I_{FT}	--	--	5	mA
Holding Current	-	I_H	--	250	--	μA

Notes:

1. $T_A=25^{\circ}\text{C}$ unless otherwise noted.

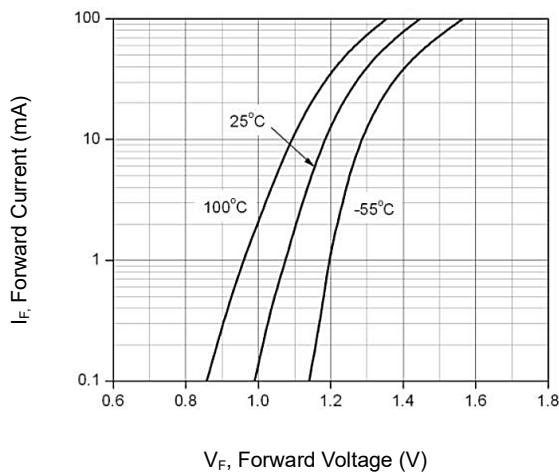
2. Test voltage must be applied within dv/dt rating.

3. This is static dv/dt . Commutating dv/dt is a function of the load-driving thyristor(s) only.

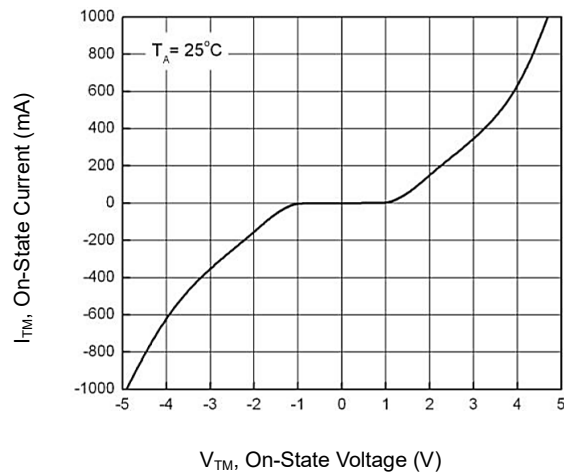
4. Guaranteed to trigger at an I_F value less than or equal to max I_{FT} , therefore recommended operating I_F lies between max I_{FT} (5mA) and absolute maximum I_F (60mA).

CHARACTERISTIC CURVES

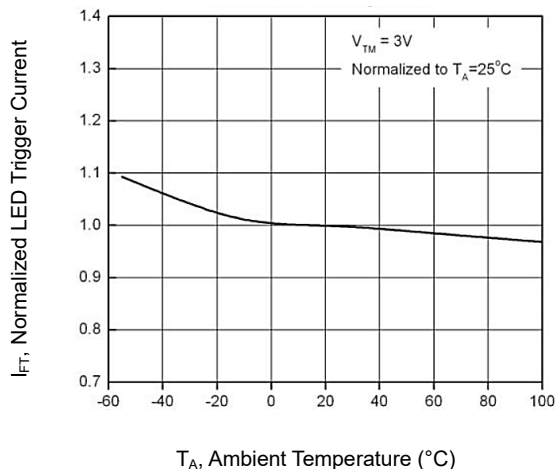
Forward Current vs. Forward Voltage



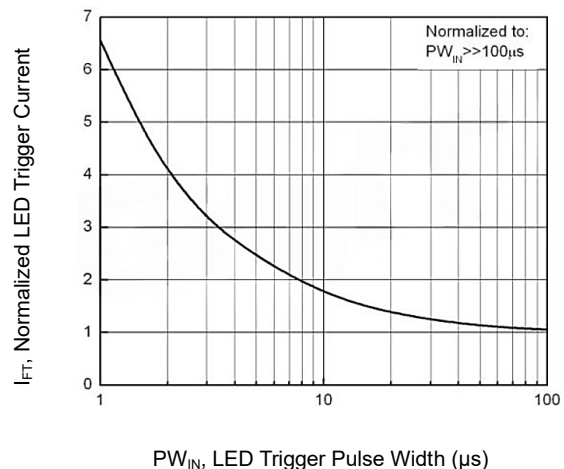
On-State Characteristics



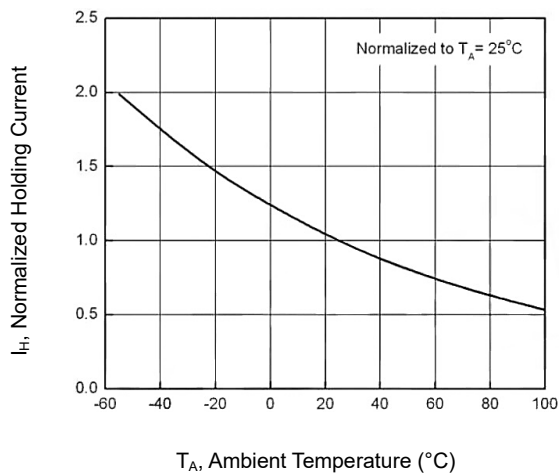
LED Trigger Current vs. Ambient Temperature



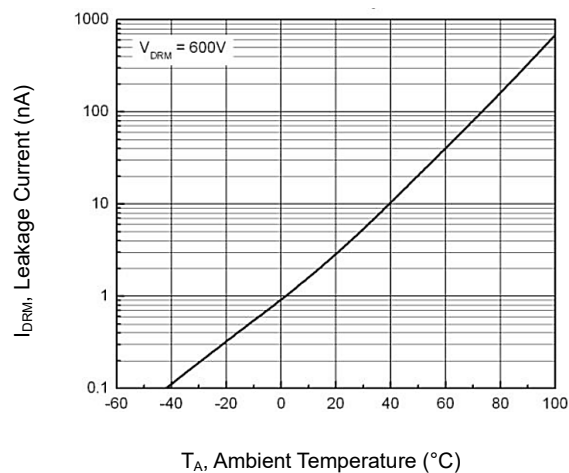
LED Current Required to Trigger vs. LED Pulse Width



Holding Current vs. Ambient Temperature

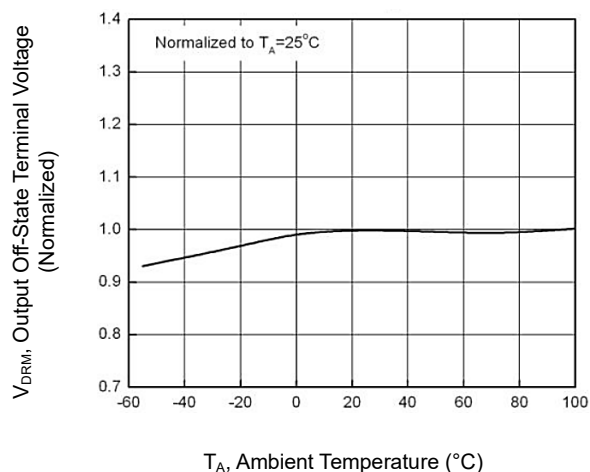


Leakage Current vs. Ambient Temperature

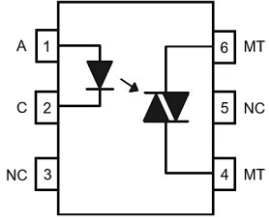


CHARACTERISTIC CURVES

Output Off-State Terminal Voltage vs. Temperature



DIMENSIONS

Item	Min (mm)	Max (mm)	Pin Layout	
A	4.00	4.60		
A2	3.20	3.80		
c	0.25			
D	6.82	7.42		
E	--	10.30		
E1	6.20	6.80		
e	2.54			
e1	5.08			
L1	7.62			
X	1.78			
X1	2.54		1. LED Anode 2. LED Cathode 3. NC	4. Main Terminal 5. Substrate (Do not connect) 6. Main Terminal
X2	5.08			
Y	1.52			
Y1	9.27			

