

Optoisolator

1CH DC TRIAC SMD-6

OPI150DCTEL3083

MERITEK

FEATURE

- Zero-Cross TRIAC Driver Optoisolator
- Peak Breakdown Voltage: 800V
- 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 $T_A=85^{\circ}\text{C}$)		7.6	mW/ $^{\circ}\text{C}$
Output Off-State Terminal Voltage		V_{DRM}	800	V
Output Peak Repetitive Surge Current	PW=1ms, 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

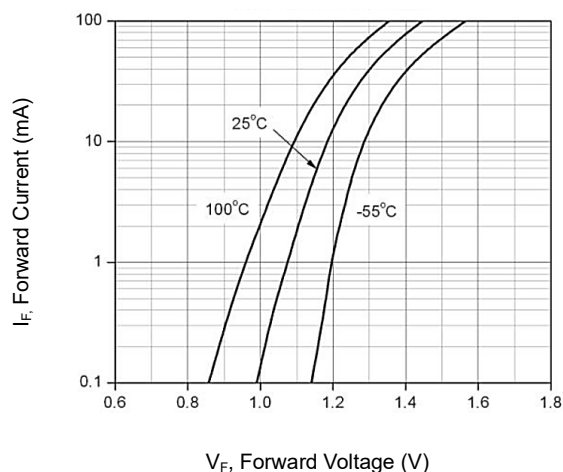
Input Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Forward Voltage	$I_F=30\text{mA}$	V_F	--	--	1.5	V
Reverse Current	$V_R=6\text{V}$	I_R	--	--	10	μA
Output Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Peak Blocking Current	$V_{\text{DRM}}=\text{Rated } V_{\text{DRM}}, I_F=0\text{mA}$	I_{DRM}	--	--	500	nA
Peak On-State Voltage	$I_{\text{TM}}=100\text{mA Peak}, I_F=\text{Rated } I_{\text{FT}}$	V_{TM}	--	--	3	V
Critical Rate of Rise of Off-State Voltage	$V_{\text{PEAK}}=\text{Rated } V_{\text{DRM}}, I_F=0$	dv/dt	600	--	--	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	--	280	--	μA
Zero Crossing Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Inhibit Voltage	$I_F=\text{Rated } I_{\text{FT}}$	V_{INH}	--	--	20	V
Leakage in Inhibited State	$I_F=\text{Rated } I_{\text{FT}}, \text{Rated } V_{\text{DRM}}, \text{Off State}$	I_{DRM2}	--	--	500	μA

Notes:

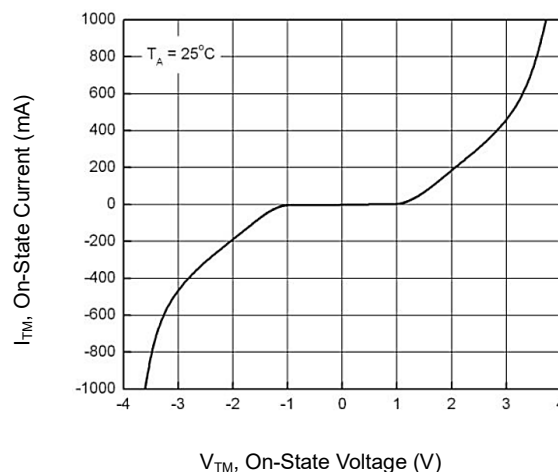
1. $T_A=25^{\circ}\text{C}$ unless otherwise noted.
2. Test voltage must be applied within dv/dt rating.
3. This is static dv/dt. Commutating dv/dt is a function of the load-driving thyristor(s) only.
4. Guaranteed to trigger at an I_F value less than or equal to max I_{FT} , therefore recommended operating I_F lies between max I_{FT} (5mA) and absolute maximum I_F (60mA).

CHARACTERISTIC CURVES

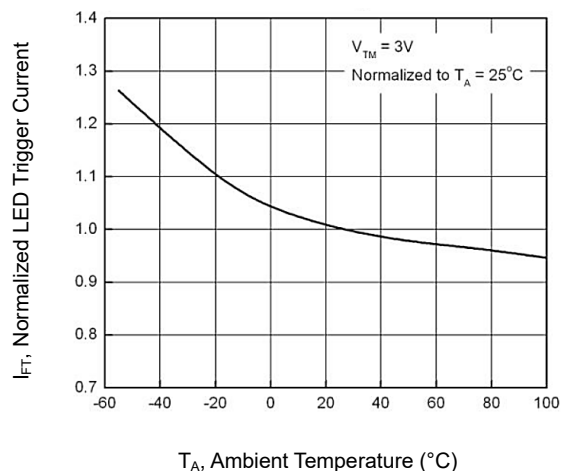
Forward Current vs. Forward Voltage



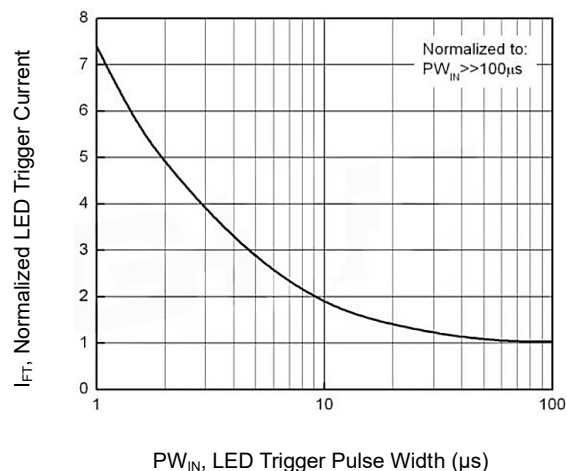
On-State Characteristics



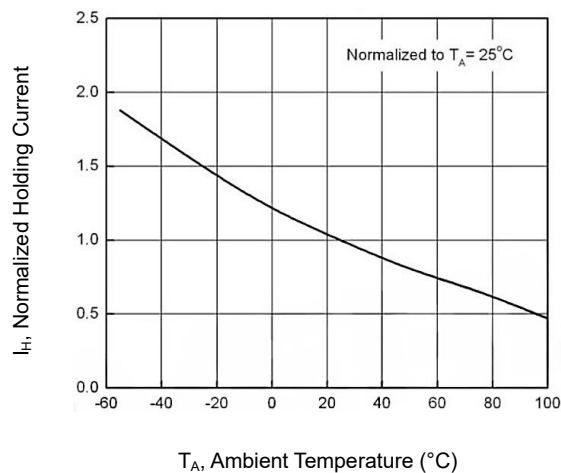
LED Trigger Current vs. Ambient Temperature



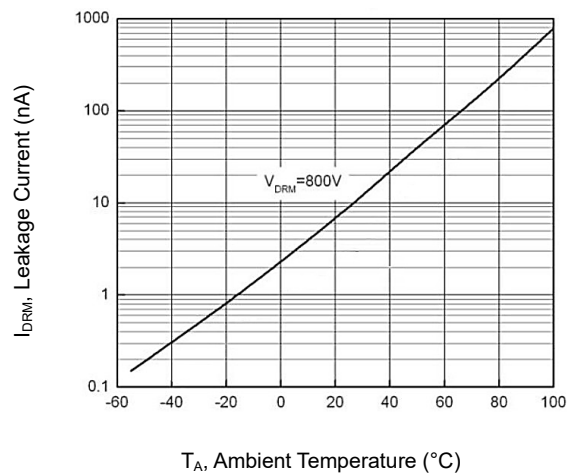
LED Current Required to Trigger vs. LED Pulse Width



Holding Current vs. Ambient Temperature



Leakage Current vs. Ambient Temperature



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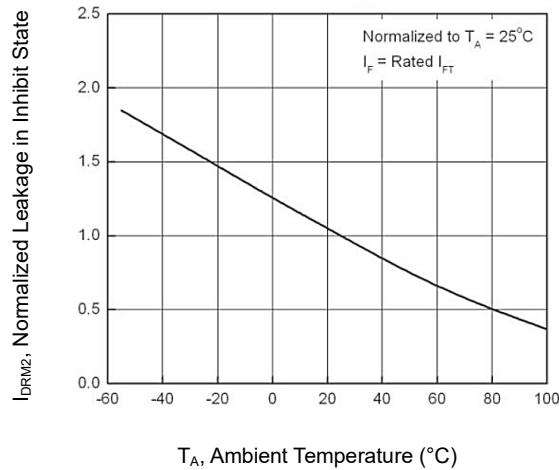
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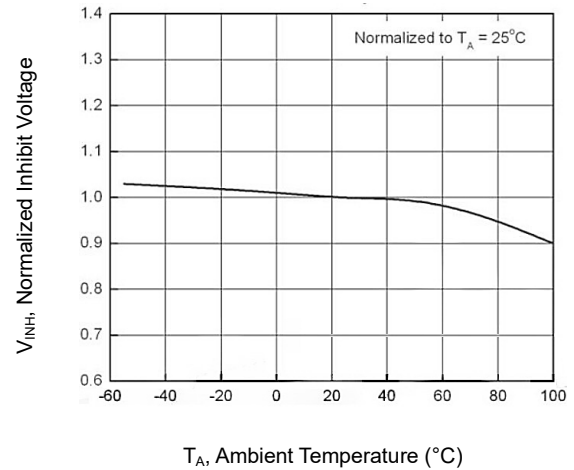
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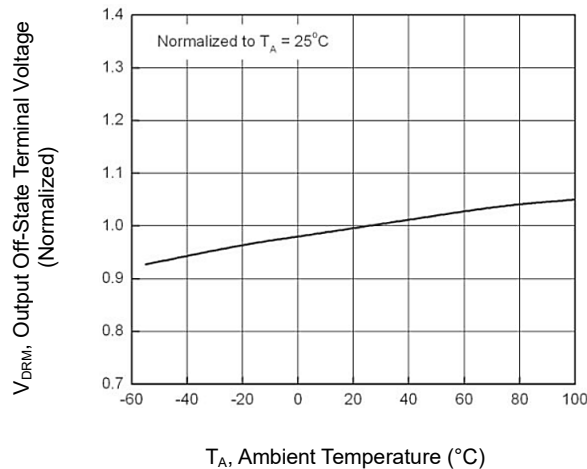
Leakage in Inhibit State vs. Temperature



Inhibit Voltage vs. Temperature



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			
X2	5.08			
Y	1.52			
Y1	9.27			

