

Optoisolator

1CH DC TRIAC SMD-6

OPI137DC800T6S

MERITEK

FEATURE

- Zero-Cross TRIAC Driver Optoisolator
- Peak Breakdown Voltage: 800V
- Isolation Voltage: 3750 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	50	mA
Input Peak Forward Current	$f=100\text{Hz}$, Duty=1%	I_{FP}	1	A
Input Reverse Voltage		V_R	5	V
Input Power Dissipation		P_I	120	mW
Output Power Dissipation		P_C	150	mW
Output Off-State Terminal Voltage		V_{DRM}	800	V
Output Peak Repetitive Surge Current	PW=100 μ s, 120pps	I_{TSM}	1	A
Output Peak Load Current	100ms (1 pulse)	I_{PEAK}	0.6	A
Isolation Voltage	AC for 60sec, RH60%	V_{ISO}	3750	V_{RMS}
Total Power Dissipation		P_T	250	mW
Operating Temperature Range		T_{Opr}	-40~+100	$^{\circ}\text{C}$
Storage Temperature Range		T_{Stg}	-50~+125	$^{\circ}\text{C}$
Soldering Temperature	10 seconds Max.	T_{SOL}	260	$^{\circ}\text{C}$

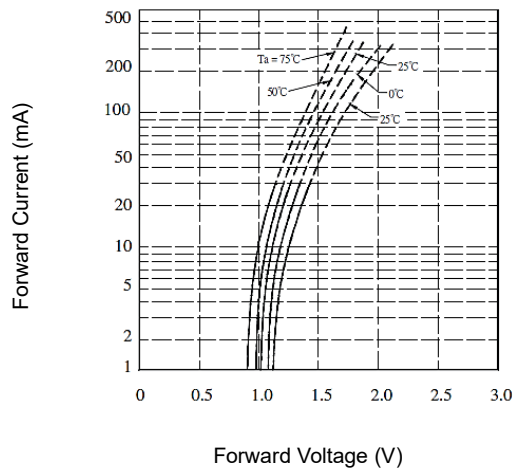
ELECTRICAL CHARACTERISTICS

Input Characteristics		Conditions	Symbol	Min	Typ.	Max	Unit
Forward Voltage		$I_F=10\text{mA}$	V_F	--	1.2	1.4	V
Reverse Current		$V_R=5\text{V}$	I_R	--	0.05	10	μA
Output Characteristics		Conditions	Symbol	Min	Typ.	Max	Unit
Peak Blocking Current, Either Direction		$V_{DRM}=800\text{V}$	I_{DRM}	--	--	500	nA
Peak On-State Voltage, Either Direction		$I_{TM}=100\text{mA}$ Peak	V_{TM}	--	1.8	3.0	V
Critical Rate of Rise of Off-State Voltage		-	dv/dt	1000	2000	--	V/ μs
Coupled Characteristics		Conditions	Symbol	Min	Typ.	Max	Unit
LED Trigger Current, Current Required to Latch Output, Either Direction		Main Terminal Voltage=3V	I_{FT}	--	7	15	mA
Holding Current, Either Direction		-	I_H	--	100	--	μA
Turn-on Time		$V_P=9\text{V}$, $I_F=20\text{mA}$, $R_L=100\Omega$	t_{on}	--	8	20	μs
Zero Crossing Characteristics		Conditions	Symbol	Min	Typ.	Max	Unit
Inhibit Voltage		$I_F=\text{Rated } I_{FT}$, MT1-MT2 Voltage above which device will not trigger	V_{INH}	--	5	20	V
Leakage in Inhibited State		$I_F=\text{Rated } I_{FT}$, Rated V_{DRM} , Off State	I_{DRM2}	--	--	500	μA

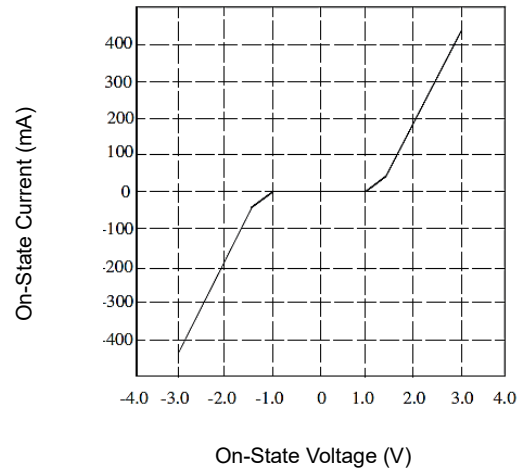
Note: $T_A=25^{\circ}\text{C}$ unless otherwise noted.

CHARACTERISTIC CURVES

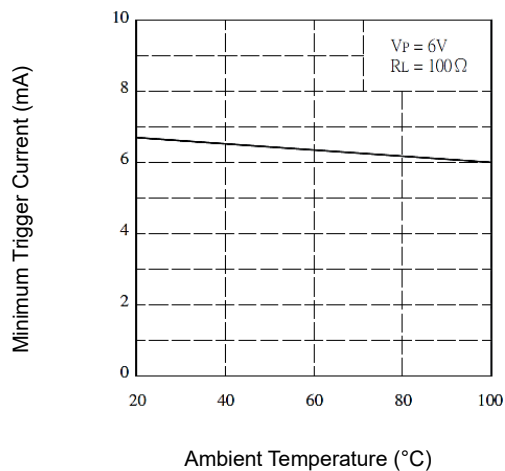
Forward Current vs. Forward Voltage



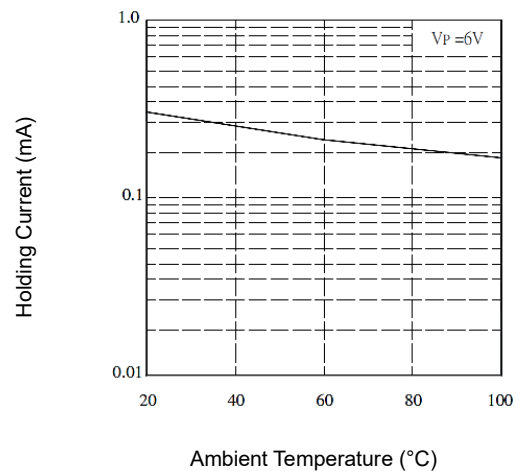
On-State Characteristics



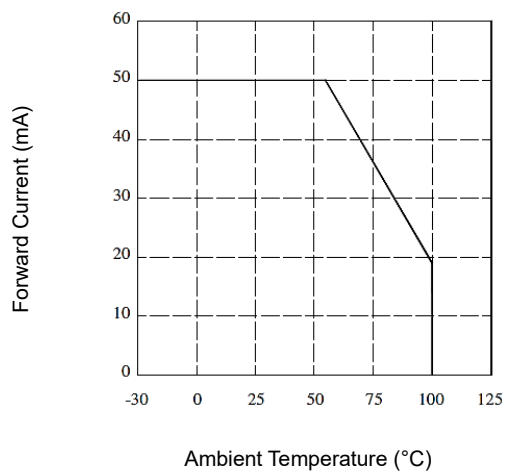
Minimum Trigger Current vs. Ambient Temperature



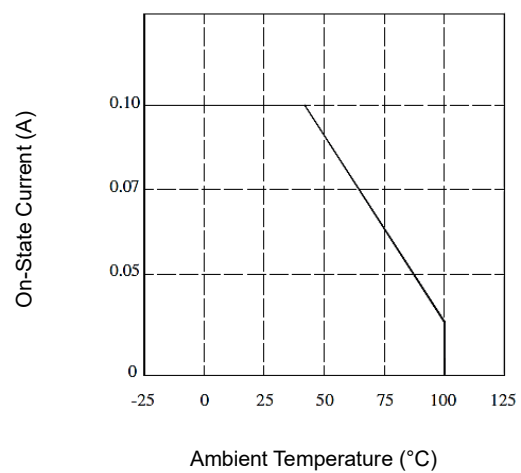
Holding Current vs. Ambient Temperature



Forward Current vs. Ambient Temperature

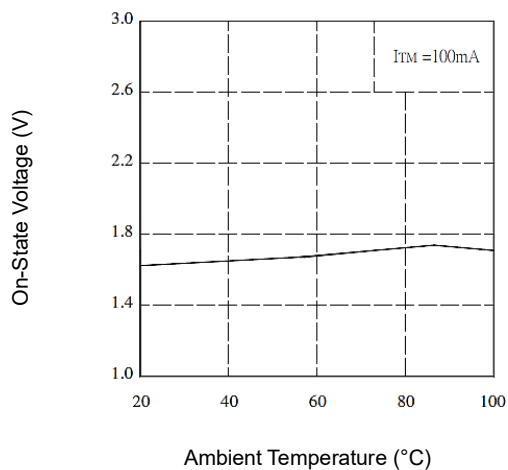


On-State Current vs. Ambient Temperature

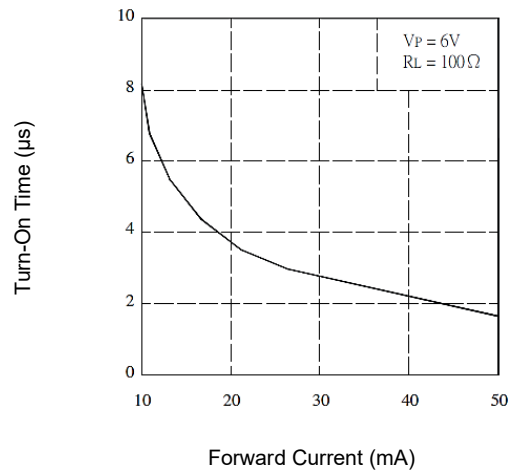


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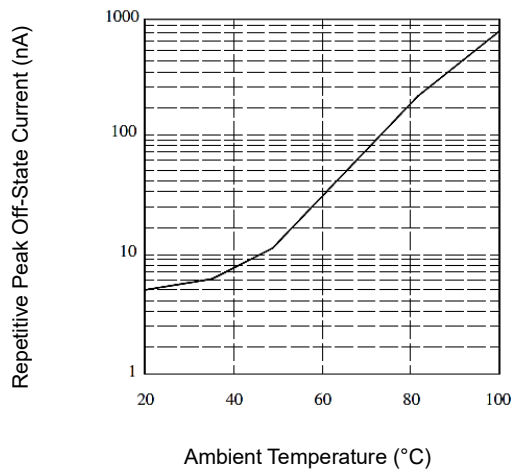
On-State Voltage vs. Ambient Temperature



Turn-On Time vs. Forward Current



Repetitive Peak Off-State Current vs. Temperature



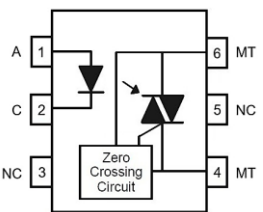
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DIMENSIONS

Item	Min (mm)	Max (mm)	Pin Layout
A	3.30	3.70	
A2	3.20	3.60	
c	0.25		
D	8.60	9.00	
E	9.80	10.20	
E1	6.20	6.60	
e	2.54		
e1	5.08		
L1	7.42	7.82	
X	1.50		
X1	2.54		
X2	5.08		1. LED Anode 2. LED Cathode 3. NC 4. Main Terminal 5. NC 6. Main Terminal
Y	1.90		
Y1	8.60	8.80	

