

Optoisolator

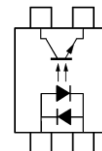
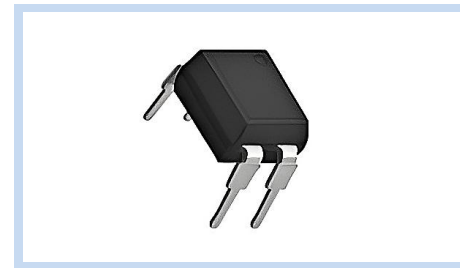
1CH AC/DC BJT DIP-4

OPI137ADB80D4

MERITEK

FEATURE

- Current Transfer Ratio: 20%~300%
- Isolation Voltage: 3750 Vrms
- High CTR with Low Input Current
- Low Coupling Capacitance
- Application: Programmable Controller, Facsimiles, Telephones
- In Accordance with Safety Class UL1577 Standard



MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Input Forward Current		I_F	± 50	mA
Input Power Dissipation		P_I	70	mW
Output Collector Current		I_C	50	mA
Output Power Dissipation		P_C	150	mW
Output Collector-Emitter Voltage		V_{CEO}	80	V
Output Emitter-Collector Voltage		V_{ECO}	7	V
Isolation Voltage	AC for 60sec, RH40~60%	V_{ISO}	3750	V_{RMS}
Total Power Dissipation		P_T	220	mW
Operating Temperature Range		T_{Opr}	-55~+110	°C
Storage Temperature Range		T_{Stg}	-55~+125	°C
Soldering Temperature	For 10 sec	T_{SOL}	260	°C

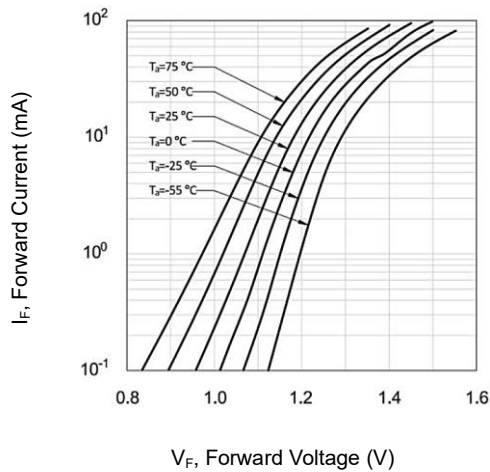
ELECTRICAL CHARACTERISTICS

Input Characteristics		Conditions	Symbol	Min	Typ.	Max	Unit
Forward Voltage		I _F =±20mA	V _F	--	1.2	1.4	V
Input Capacitance		V=0, f=1KHz	C _{in}	--	30	250	pF
Output Characteristics		Conditions	Symbol	Min	Typ.	Max	Unit
Collector-Emitter Dark Current		V _{CE} =20V, I _F =0mA	I _{CEO}	--	--	100	nA
Collector-Emitter Breakdown Voltage		I _C =0.1mA, I _F =0mA	BV _{CEO}	80	--	--	V
Emitter-Collector Breakdown Voltage		I _E =10μA, I _F =0mA	BV _{ECO}	7	--	--	V
Coupled Characteristics		Conditions	Symbol	Min	Typ.	Max	Unit
Current Transfer Ratio	OPI150ADB80D4	I _F =1mA, V _{CE} =5V	CTR	20	--	300	%
	OPI150ADB80D4A			50	--	150	
	OPI150ADB80D4B			100	--	300	
Collector-Emitter Saturation Voltage		I _F =±20mA, I _C =1mA	V _{CE(SAT)}	--	0.1	0.2	V
Isolation Resistance		V _{IO} =500V _{DC} , RH40~60%	R _{ISO}	5x10 ¹⁰	1x10 ¹¹	--	Ω
Isolation Capacitance		V=0, f=1MHz	C _{ISO}	--	0.6	1.0	pF
Cut-Off Frequency		V _{CE} =2V, I _C =2mA, R _L =100Ω, -3dB	f _c	--	80	--	kHz
Rise Time		V _{CE} =2V, I _C =2mA, R _L =100Ω	t _r	--	5	18	μs
Fall Time			t _f	--	5	18	

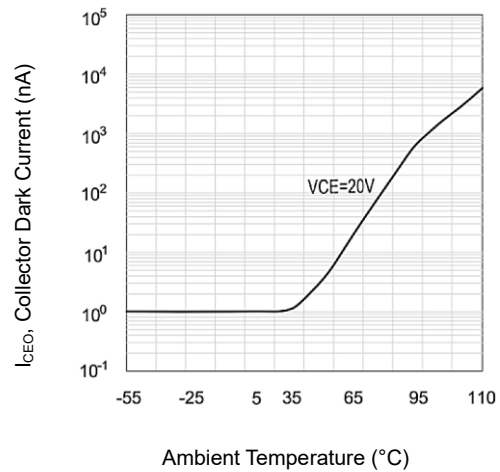
Note: $T_A=25^\circ\text{C}$ unless otherwise noted.

CHARACTERISTIC CURVES

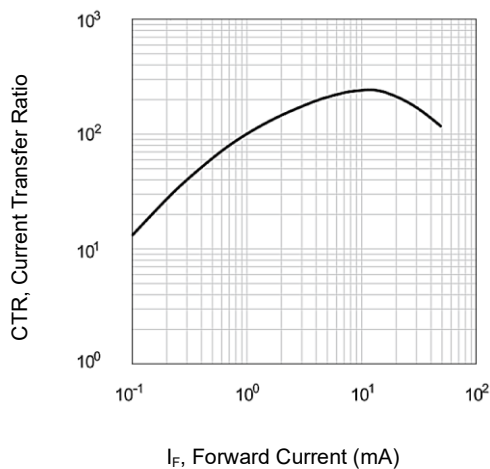
Forward Current vs. Forward Voltage



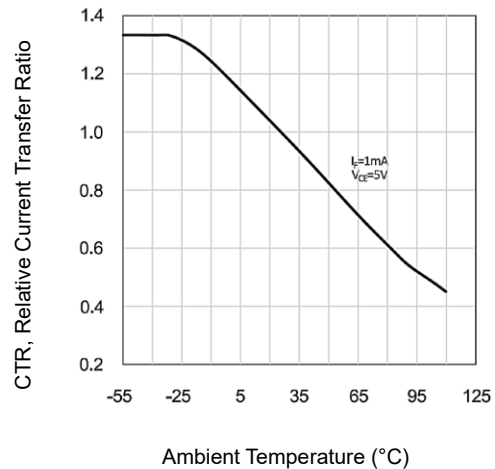
Collector Dark Current vs. Temperature



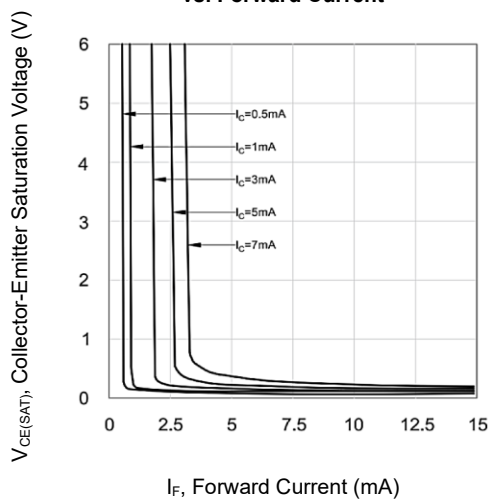
Current Transfer Ratio vs. Forward Current



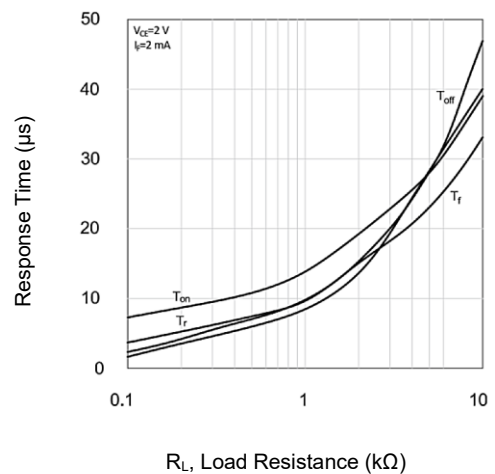
Relative Current Transfer Ratio vs Temperature



Collector-Emitter Saturation Voltage vs. Forward Current

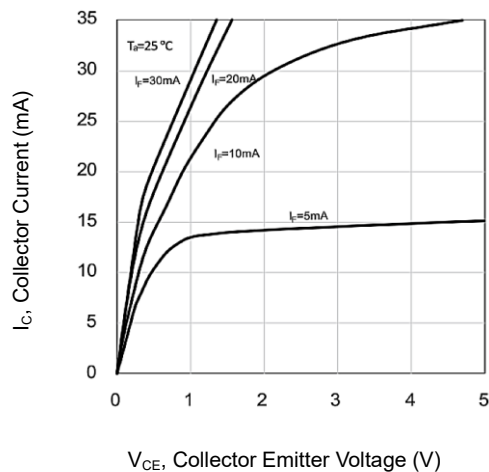


Response Time vs. Load Resistance

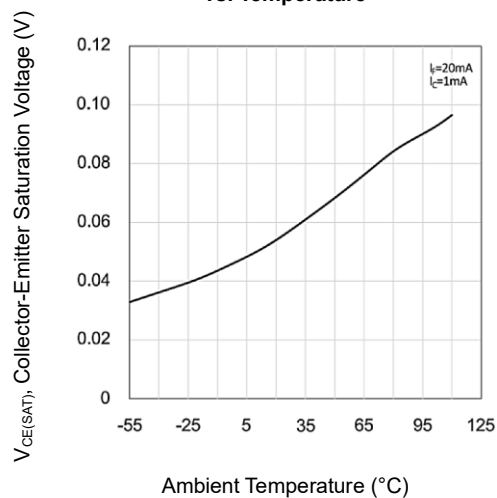


CHARACTERISTIC CURVES

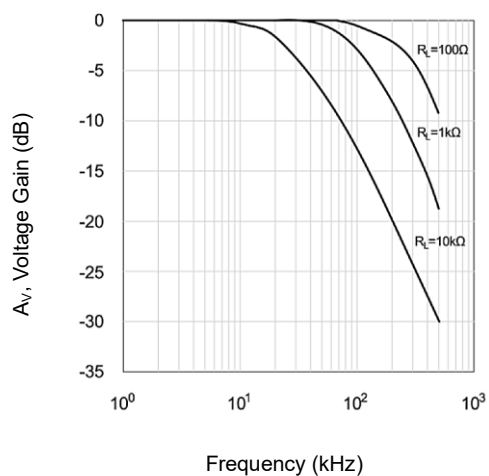
Collector Current vs. Collector Emitter Voltage



Collector-Emitter Saturation Voltage vs. Temperature



Frequency Response



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DIMENSIONS

Item	Min (mm)	Max (mm)
A	6.70	7.10
A1	3.20	3.60
A2	3.70	4.10
b	0.27	0.67
c	0.25	
D	4.50	4.90
E	6.20	6.60
E1	7.42	7.82
e	2.54	
X	2.54	
Y	7.62	

Note:

1.Cathode/Anode; 2.Anode/Cathode; 3.Emitter; 4.Collector

