Optoisolator
1CH DC BJT SOP-4

OPI137DCB80S4A

MERITEK

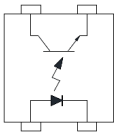
FEATURES

- Current Transfer Ratio: 80%~160%
- Isolation Voltage: 3750 Vrms
- High CTR with Low Input Current
- In Accordance with Safety Class UL1577 Standard



APPLICATIONS

- Programmable Controller, Facsimiles, Telephones
- System Appliances and Measuring Instruments
- Signal Transmission between Circuits of Different Potentials and Impedances



RoHS

c UL us

MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Input Forward Current		I_F	50	mA
Input Peak Forward Current		I_{FP}	1	A
Input Reverse Voltage		V_R	5	V
Output Collector Current		I_C	50	mA
Output Power Dissipation		P_C	150	mW
Output Collector-Emitter Voltage	I_C=1mA, I_B=0A	V_{CEO}	80	V
Output Emitter-Collector Voltage	I_E=100μA, I_B=0A	V_{ECO}	6	V
Isolation Voltage	AC for 60sec, RH60%	V_{ISO}	3750	V_{RMS}
Power Dissipation		P_T	200	mW
Operating Temperature Range		T_{Opr}	-55~+100	°C
Storage Temperature Range		T_{Stg}	-55~+125	°C
Soldering Temperature	For 10 sec	T_{SOL}	260	°C

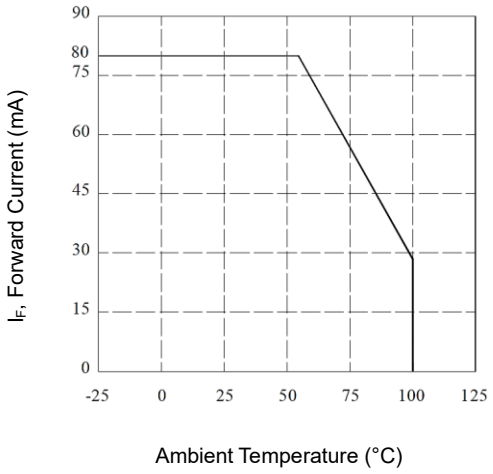
ELECTRICAL CHARACTERISTICS

Input Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Forward Voltage	I_F=20mA	V_F	--	1.2	1.4	V
Reverse Current	VR=5V	I_R	--	--	10	μA
Input Capacitance	V=0, f=1.0MHz	C_{in}	--	25	--	pF
Output Characteristics	**Conditions**	**Symbol**	**Min**	**Typ.**	**Max**	**Unit**
Collector-Emitter Dark Current	V_{CE}=10V, I_F=0mA	I_{CEO}	--	--	100	nA
Collector-Emitter Breakdown Voltage	I_C=0.5mA	BV_{CEO}	80	--	--	V
Emitter-Collector Breakdown Voltage	I_E=0.1mA	BV_{ECO}	5	--	--	V
Coupled Characteristics	**Conditions**	**Symbol**	**Min**	**Typ.**	**Max**	**Unit**
Current Transfer Ratio	I_F=5mA, V_{CE}=5V	CTR	80	--	160	%
Collector-Emitter Saturation Voltage	I_F=10mA, I_C=1mA	$V_{CE(SAT)}$	--	--	0.4	V
Isolation Resistance	V_{IO}=500V_{DC}	R_{ISO}	10^9	--	--	Ω
Isolation Capacitance	V=0, f=1MHz	C_{ISO}	--	1.0	--	pF
Rise Time	V_{CE}=5V, I_C=2mA, R_L=100Ω	t_r	--	--	3	μs
Fall Time		t_f	--	--	3	

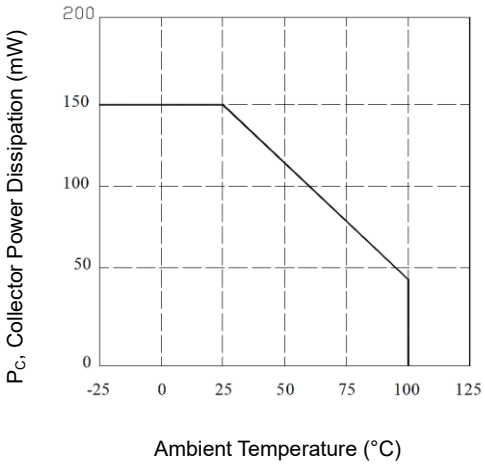
Note: T_A=25°C unless otherwise noted.

CHARACTERISTIC CURVES

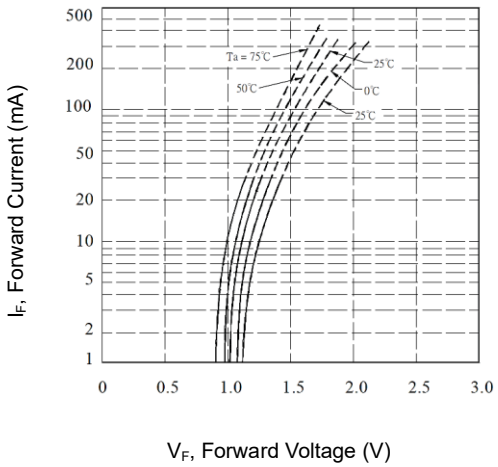
Forward Current vs. Temperature



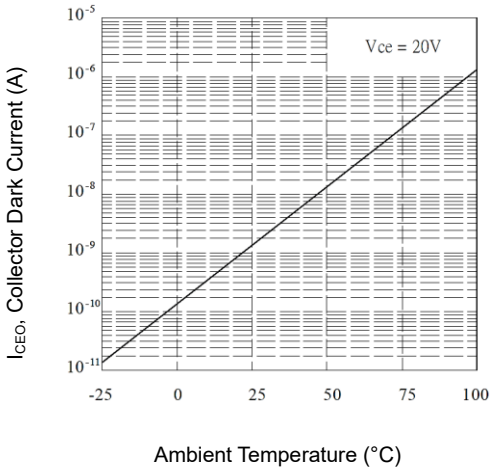
Collector Power Dissipation vs Temperature



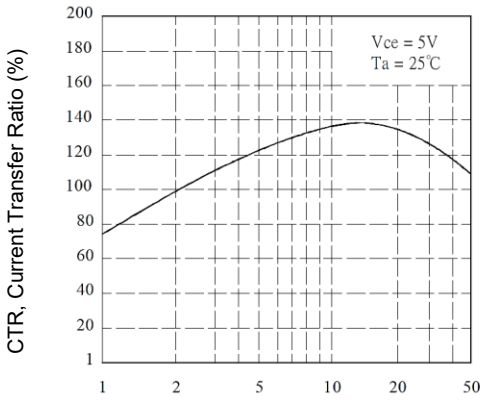
Forward Current vs. Forward Voltage



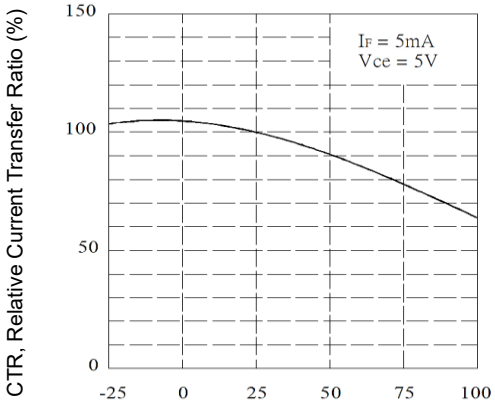
Collector Dark Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current

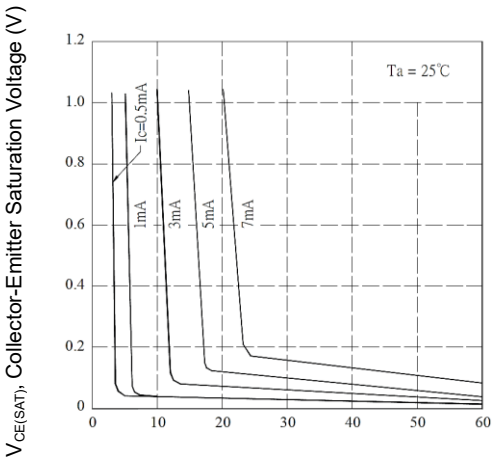


Relative Current Transfer Ratio vs Temperature

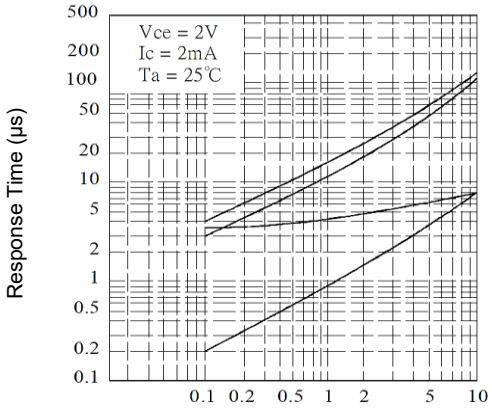


CHARACTERISTIC CURVES

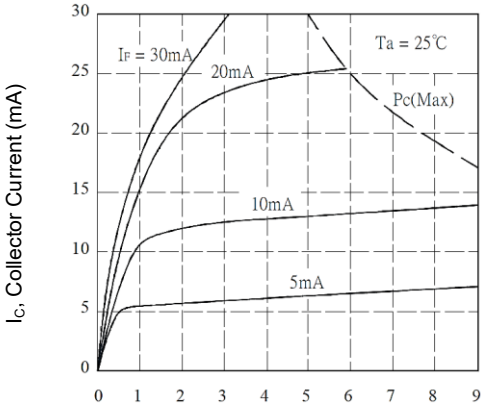
Collector-Emitter Saturation Voltage vs. Forward Current



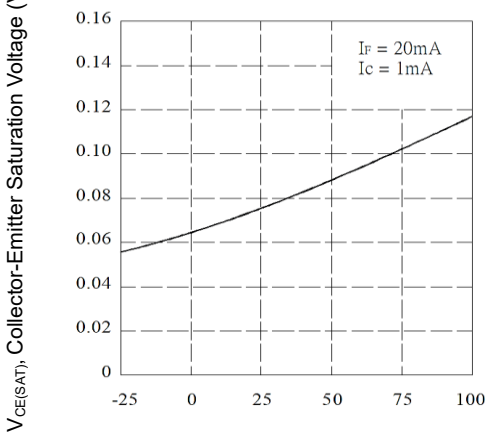
Response Time vs. Load Resistance



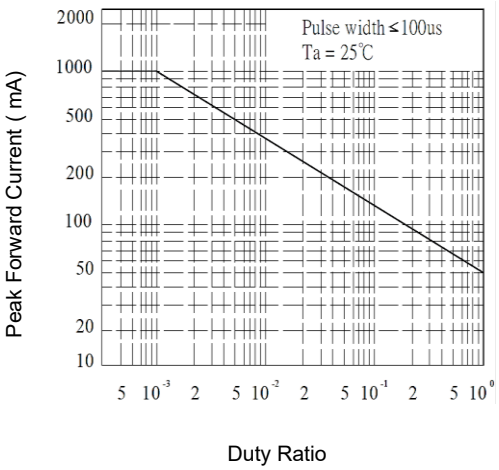
Collector Current vs. Collector-Emitter Voltage



Collector-Emitter Saturation Voltage vs. Ambient Temperature



Peak Forward Current vs. Duty Ratio



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DIMENSIONS

Item	Min (mm)	Max (mm)
A1	--	0.10
A2	1.80	2.20
b	--	0.40
D	4.10	4.50
E	6.40	7.20
E1	4.20	4.60
e	2.54	
L	0.46	0.86
X	0.80	
X1	2.54	
Y	1.20	
Y1	7.20	
Z	0.93	

Note:
1.LED Anode; 2.LED Cathode; 3.Emitter; 4.Collector

