

Optoisolator

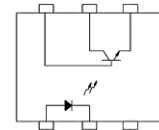
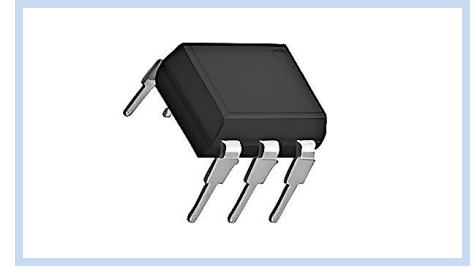
1CH DC BJT DIP-6

OPI137DCB30D6

MERITEK

FEATURE

- Current Transfer Ratio: 40%~320%
- Isolation Voltage: 3750 Vrms
- High CTR with Low Input Current
- Low Coupling Capacitance
- Application: Programmable Controller, SMPS
- In Accordance with Safety Class UL1577 Standard



MAXIMUM RATINGS

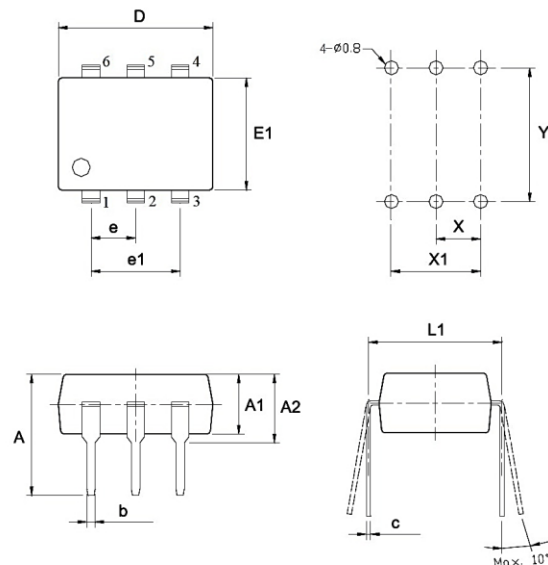
Parameter		Symbol	Value	Unit
Input Forward Current		I_F	60	mA
Input Peak Forward Current	Pulse width $\leq 1\mu s$, Duty 0.001	I_{FP}	1	A
Input Reverse Voltage		V_R	6	V
Input Power Dissipation		P_I	100	mW
Output Collector Current		I_C	100	mA
Output Power Dissipation		P_C	300	mW
Output Collector-Emitter Voltage		V_{CEO}	30	V
Output Collector-Base Voltage		V_{CBO}	70	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	350	mW
Operating Temperature Range		T_{Opr}	-55~+100	$^{\circ}C$
Storage Temperature Range		T_{Stg}	-55~+125	$^{\circ}C$
Soldering Temperature	For 10 sec	T_{SOL}	260	$^{\circ}C$

DIMENSIONS

Item	Min (mm)	Max (mm)
A	6.85	7.45
A1	3.20	3.80
A2	4.16	4.76
b	0.40	0.60
c	0.154	0.354
D	6.82	7.42
E1	6.20	6.80
e	2.29	2.79
L1	7.32	7.92
X	2.54	
X1	5.08	
Y	7.62	

Note:

1.Anode; 2.Cathode; 3.N/A; 4.Emitter; 5.Collector; 6.Base



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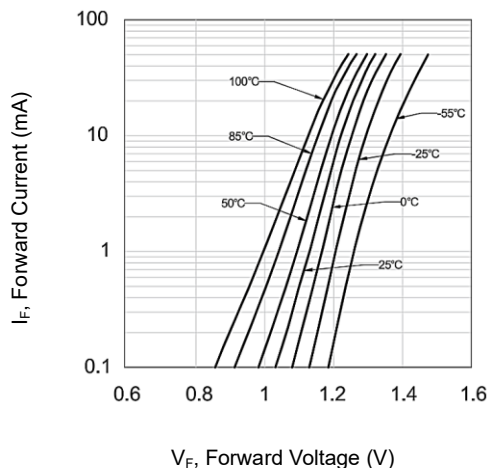
ELECTRICAL CHARACTERISTICS

Input Characteristics		Conditions	Symbol	Min	Typ.	Max	Unit
Forward Voltage		I _F =10mA	V _F	--	1.2	1.5	V
Reverse Current		V _R =4V	I _R	--	--	10	μA
Input Capacitance		V=0, f=1kHz	C _{in}	--	50	--	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}	30	--	--	V
Collector-Base Breakdown Voltage		I _C =0.1mA, I _F =0mA	BV _{CBO}	70	--	--	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	OPI137DCB30D6	I _F =10mA, V _{CE} =5V	CTR	40	--	320	%
	OPI137DCB30D6A			40	--	80	
	OPI137DCB30D6B			63	--	125	
	OPI137DCB30D6C			100	--	200	
	OPI137DCB30D6D			160	--	320	
	OPI137DCB30D6	I _F =1mA, V _{CE} =5V		13	90	--	
	OPI137DCB30D6A			13	30	--	
	OPI137DCB30D6B			22	45	--	
	OPI137DCB30D6C			34	70	--	
	OPI137DCB30D6D			56	90	--	
Collector-Emitter Saturation Voltage		I _F =10mA, I _C =2.5mA	V _{CE(SAT)}	--	--	0.3	V
Isolation Resistance		V _{IO} =500V _{DC} , RH40~60%	R _{ISO}	5x10 ¹⁰	1x10 ¹¹	--	Ω
Isolation Capacitance		V=0V, f=1MHz	C _{ISO}	--	1.0	2.5	pF
Rise Time		V _{CE} =10V, I _C =2mA, R _L =100Ω	t _r	--	6	10	μs
Fall Time			t _f	--	8	10	
Rise Time		V _{CE} =5V, I _C =10mA, R _L =75Ω	t _r	--	3	10	μs
Fall Time			t _f	--	2	10	

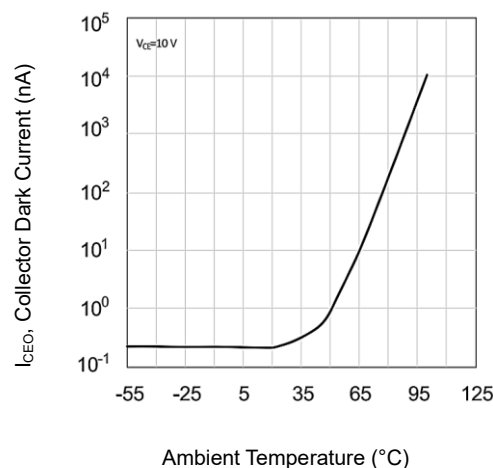
Note: $T_A=25^\circ\text{C}$ unless otherwise noted.

CHARACTERISTIC CURVES

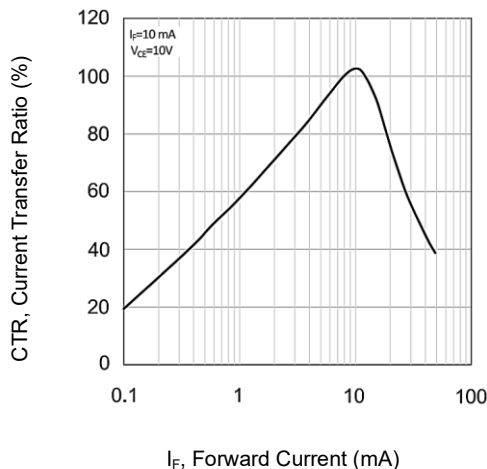
Forward Current vs. Forward Voltage



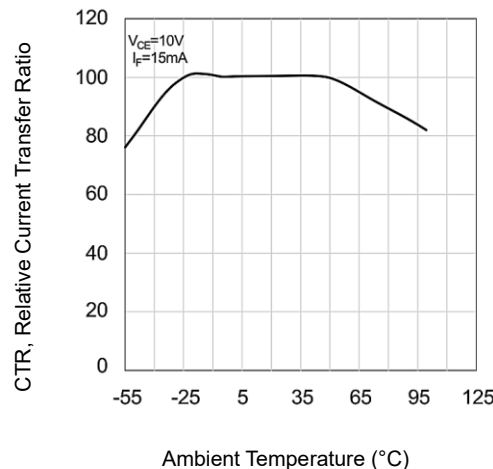
Collector Dark Current vs. Temperature



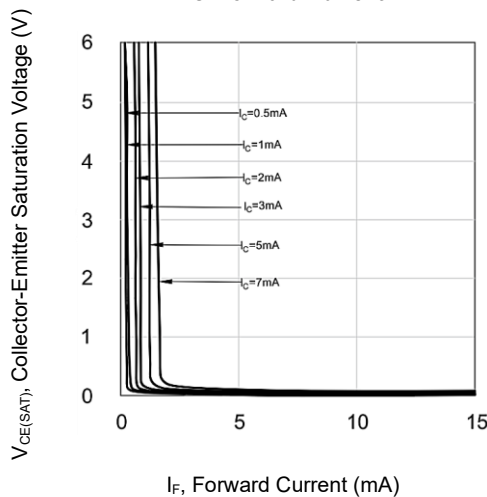
Current Transfer Ratio vs. Forward Current



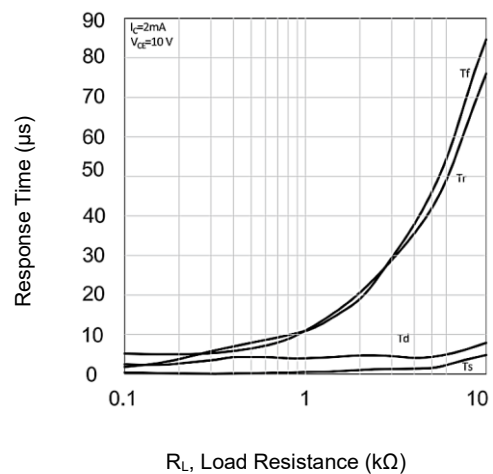
Relative Current Transfer Ratio vs Temperature



Collector-Emitter Saturation Voltage vs. Forward Current

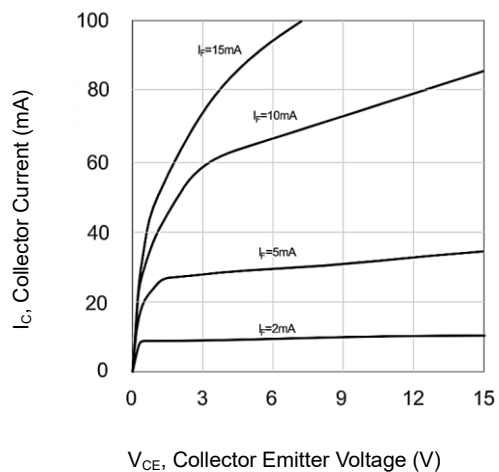


Response Time vs. Load Resistance



CHARACTERISTIC CURVES

Collector Current vs. Collector Emitter Voltage



Frequency Response

