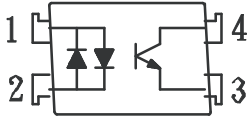




Schematic:



For dimensions and pin-outs, see the last page of this document.

Features:

1. Current transfer ratio (CTR:MIN.20% at $I_F=5\text{mA}$ $V_{CE}=5\text{V}$)
2. High isolation voltage between input and output (Viso:5300Vrms).
3. Compact dual-in-line package.
4. Ac input.

Ordering:

Suffix to Standard Part Number

- V = VDE Compliant
- G = 10mm Lead Spread
- S = Surface Mount Lead-form
- T = Tape & Reel

Superior OPTO Part Number:

OPTO440

Absolute Maximum Ratings:

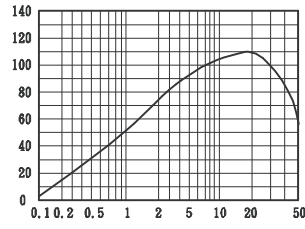
(Ta=25°C)				
	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	± 50	mA
	Peak forward current	I_{FM}	± 1	A
	Power dissipation	P_D	70	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	150	mW
Total power dissipation		P_{tot}	200	mW
Isolation voltage 1 minute		V_{iso}	5300	Vrms
Operating temperature		T_{opr}	-55 to +100	°C
Storage temperature		T_{stg}	-55 to +125	°C
Soldering temperature 10 second		T_{sol}	260	°C

Electrical Characteristics:

(Ta=25°C)							
	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F = \pm 20\text{mA}$	—	1.2	1.4	V
	Peak forward voltage	V_{FM}	$I_{FM} = \pm 0.5\text{A}$	—	—	3.5	V
	Terminal capacitance	C_t	$V=0$, $f=1\text{kHz}$	—	30	—	pF
Output	Collector dark current	I_{CEO}	$V_{CE} = 20\text{V}$, $I_F = 0$	—	—	0.1	uA
Transfer characteristics	Current transfer ratio	CTR	$I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$	20	—	300	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 20\text{mA}$, $I_C = 1\text{mA}$	—	—	0.2	V
	Isolation resistance	Riso	DC500V	5×10^{10}	10^{11}	—	ohm
	Floating capacitance	C_f	$V=0$, $f=1\text{MHz}$	—	0.6	1.0	pF
	Cut-off frequency	f_c	$V_{CC} = 5\text{V}$, $I_C = 2\text{mA}$, $R_L = 100\text{ohm}$	—	80	—	kHz
	Response time (Rise)	t_r	$V_{CE} = 2\text{V}$, $I_C = 2\text{mA}$, $R_L = 100\text{ohm}$	—	5	20	us
	Response time (Fall)	t_f		—	4	20	us

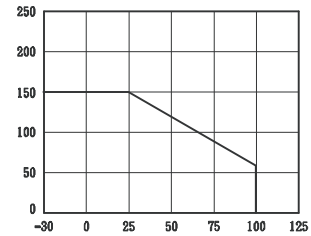
CTR Selections are Available

Fig.1 Current Transfer Ratio vs. Forward Current



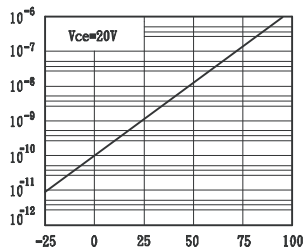
Forward Current I_F (mA)

Fig.2 Collector Power Dissipation vs. Ambient Temperature



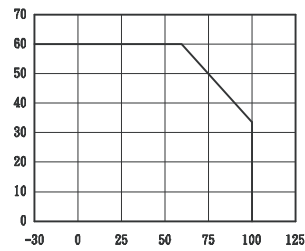
Ambient Temperature T_a (°C)

Fig.3 Collector Dark Current vs. Ambient Temperature



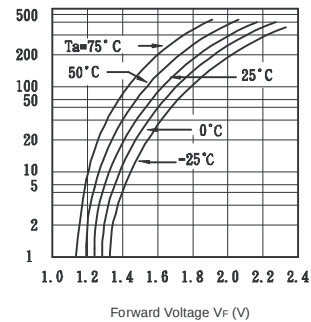
Ambient Temperature T_a (°C)

Fig.4 Forward Current vs. Ambient Temperature



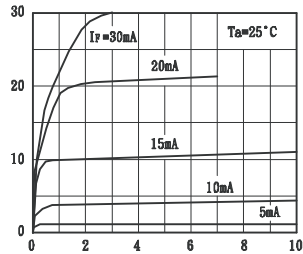
Ambient Temperature T_a (°C)

Fig.5 Forward Current vs. Forward Voltage



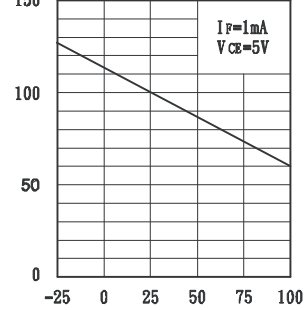
Forward Voltage V_F (V)

Fig.6 Collector Current vs. Collector-emitter Voltage



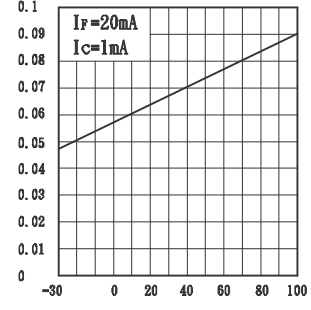
Collector-emitter Voltage V_{CE} (V)

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature



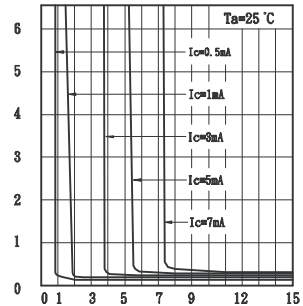
Ambient Temperature T_a (°C)

Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature



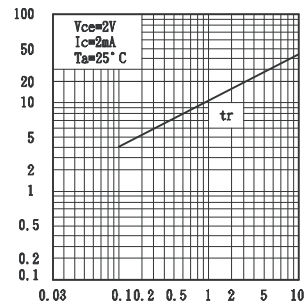
Ambient Temperature T_a (°C)

Fig.9 Collector-emitter Saturation Voltage vs. Forward Current



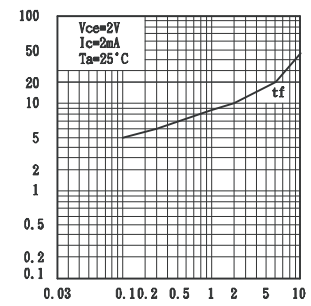
Forward Current I_F (mA)

Fig.10 Response Time vs. Load Resistance



Load Resistance R_L (K ohm)

Fig.11 Response Time vs. Load Resistance



Load Resistance R_L (K ohm)

Fig.1 : 4-pin DIP type

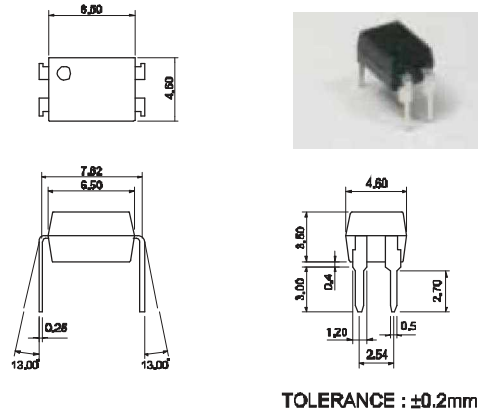


Fig.2 : 4-pin SMD type

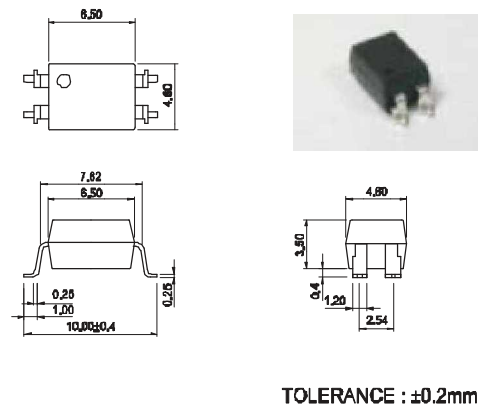


Fig.3 : 4-pin G type

