

FEATURES

- High Vceo (300Volts)
- UL approval E196140
- High Current Transfer Ratio (1000 min @ 1mA)
- High Isolation Voltage between LED and Opto Transistor (3750Volts)
- Mini-flat Surface mount Package

GENERAL DESCRIPTION

The AMC127 High Voltage Opto Coupler may be used in a variety of applications where high isolation is required between primary and secondary circuits, in addition to high current transfer ratio between these circuits. The Opto-Transistor side of the AMC127 is capable of withstanding Voltages of up to 300 Volts without sustaining damage to the device.

Designed for use in telecommunications and data communications equipment the AMC127 opto coupler is an ideal replacement for the industry standard TLP127 device, but with the advantage of an increased isolation of 3750 Volts over the standard 2500 Volts.

The AMC127 fits into the standard footprint for mini-flat opto couplers and may be used as a drop in replacement for designs

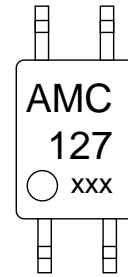
already using the Toshiba TLP127 component.

With its high current transfer ratio (Min 1000 at If=1mA) the device is ideal for switching high currents in the secondary circuit from relatively low currents flowing in the LED.

With such a high potential current transfer ratio it is an advantage that the AMC127 device is packaged in a black, rather than a white housing. This makes the AMC127 device more insensitive to background ambient light levels than devices packaged using white plastic.

As with all our devices, Alpha Micro Components offers full engineering support on designs using the AMC127 component for engineers requiring any assistance at the design stage of their project.

4-pin Mini-Flat Package

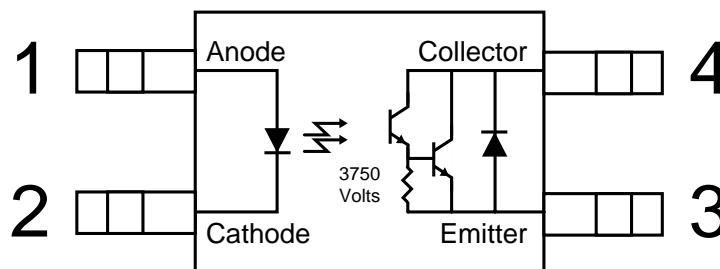


AMC127 Package outline

APPLICATIONS

- Telephone sets
- Data modem line interface circuits.
- Photo-Copiers
- Fax machines
- Switched mode power supply control
- Linear power supply control / sensing
- High density surface mount systems
- Ideal for use in the Alpha Micro Components "High sensitivity" line-in-use voltage detection circuit.

BLOCK DIAGRAM



DC, ac, & Isolation Characteristics

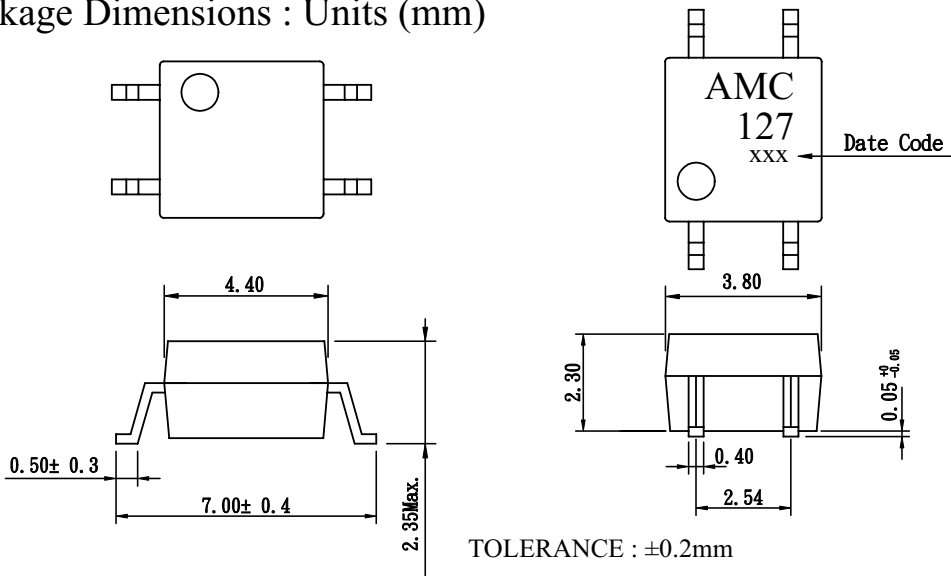
• Absolute Maximum Ratings (Ta = 25 °C)

Parameter		Symbol	Rating	Unit
Input	Forward current	If	50	mA
	Peak forward current	Ifm	1	A
	Reverse voltage	Vr	6	V
	Power dissipation	P	70	mW
Output	Collector-Emitter voltage	Vceo	300	V
	Emitter-collector voltage	Veco	0.1	V
	Collector current	Ic	150	mA
	Collector power dissipation	Pc	150	mW
Total power dissipation		Ptot	170	mW
Isolation voltage 1 minute		Viso	3750	Vrms
Operating temperature		Topr	-30 to +100	°C
Storage temperature		Tstg	-40 to +125	°C
Soldering temperature 10 seconds		Tsol	260	°C

• Electrical / Optical Characteristics (Ta = 25 °C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	Vf	If=10mA	-	1.2	1.4	V
	Reverse voltage	Ir	Vr=4V	-	-	10	µA
	Terminal capacitance	Ct	V=0, f=1kHz	-	30	0	pF
Output	Collector dark current	Iceo	Vce=200V, If=0	-	-	1	µA
	Collector-emitter breakdown voltage	BVceo	Ic=0.1mA, If=0	300	-	-	V
Transfer Characteristics	Current transfer ratio	CTR	If=1mA, Vce=2V	1000	-	-	%
	Collector-emitter saturation voltage	Vce(sat)	If=20mA, Ic=100mA	-	-	1.5	V
	Isolation resistance	Riso	DC500, 40to60%RH	5e10	10e11	-	Ohm
	Floating capacitance	Cf-	0.6 V=0, f=1MHz	-	0.6	1.0	pF
	Response time (rise)	Tr	Vcc=2V, Ic=20mA	-	100	300	µs
	Response time (fall)	Tf	Rl=100Ohm	-	20	100	µs

Package Dimensions : Units (mm)



Operational Graphs

Fig.1 Forward Current vs. Ambient Temperature

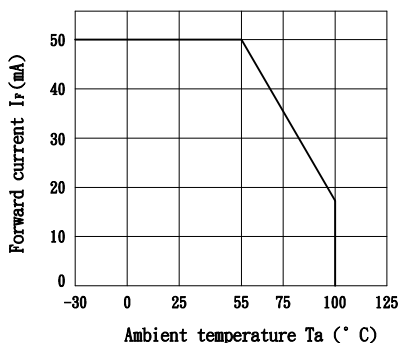


Fig.2 Collector Power Dissipation vs. Ambient Temperature

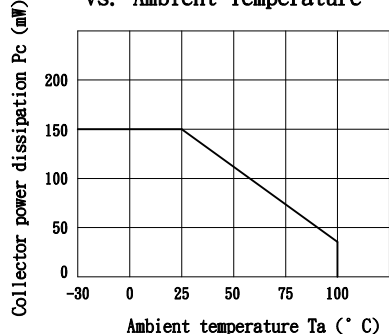


Fig.3 Peak Forward Current vs. Duty Ratio

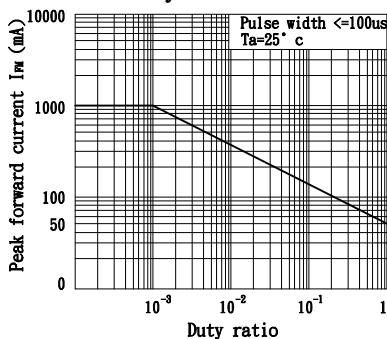


Fig.4 Forward Current vs. Forward Voltage

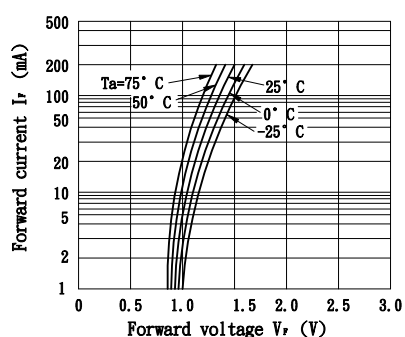


Fig.5 Current Transfer Ratio vs. Forward Current

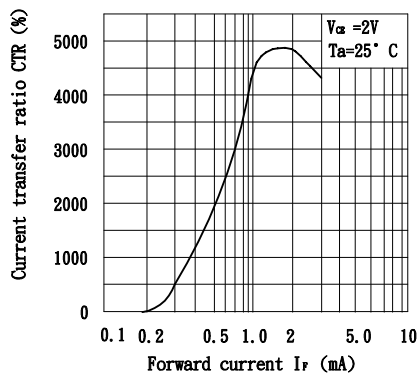


Fig.6 Collector Current vs. Collector-emitter Voltage

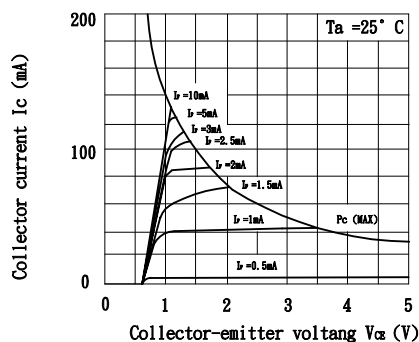


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

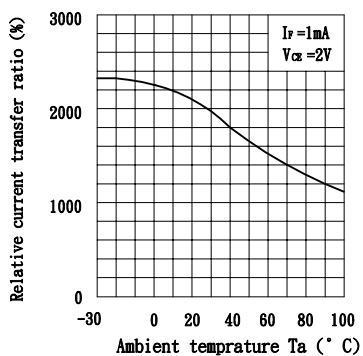


Fig.8 Collector-emitter Saturation voltage vs. Ambient Temperature

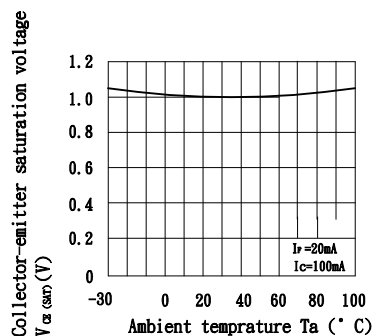


Fig. 9 Collector Dark Current vs. Ambient Temperature

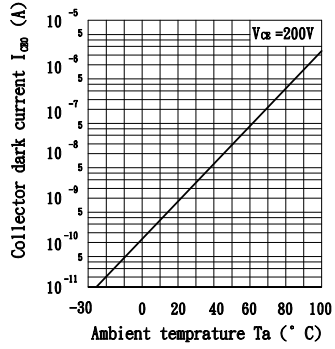


Fig. 10 Response Time vs. Load Resistance

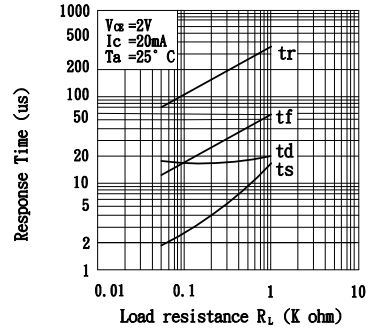


Fig. 11 Frequency Response

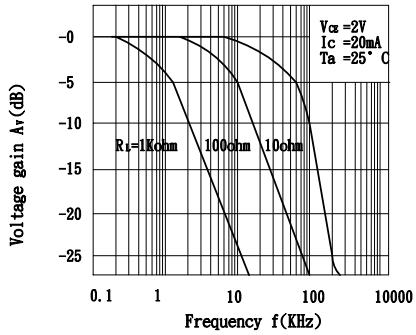
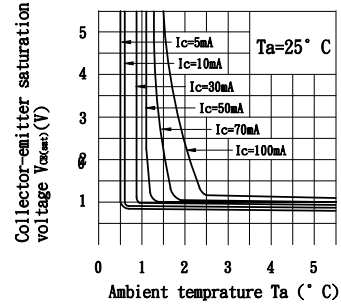
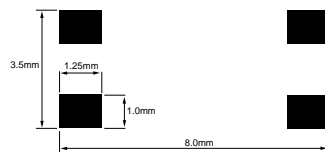


Fig. 12 Collector-emitter Saturation Voltage vs. Forward current



PCB pad detail
Recommended PCB pad layout for reflow soldering

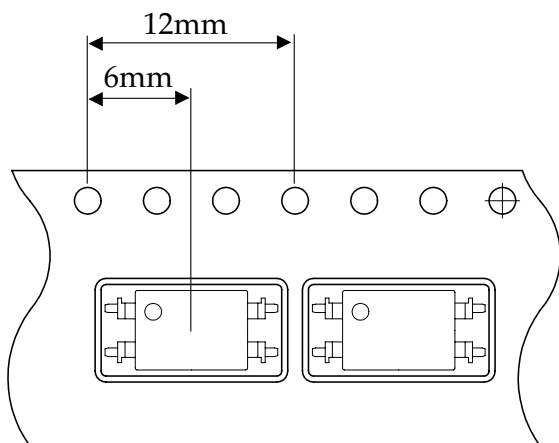


REELING INFORMATION

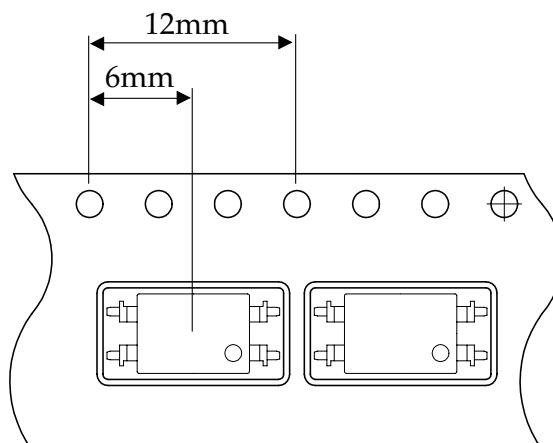
The AMC181 High Voltage Opto Coupler is available in either bulk or reeled format.

The standard reel size is 2,000 components per reel, and both left hand and right hand reel formats are available.

The difference between Left and Right hand reels is illustrated below :



TL



TR

For further details on this product contact :

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