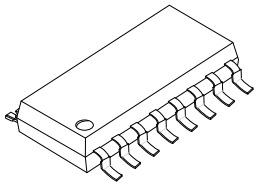
PHOTOTRANSISTOR PHOTOCOUPLER



SSOP-16-4

■ DESCRIPTION

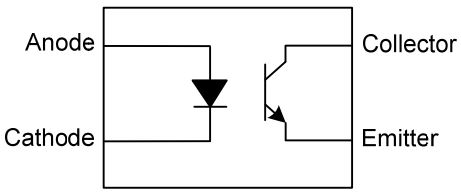
The UTC **UPC247** is a SSOP phototransistor photocoupler, it uses UTC's advanced technology to provide the customers with high isolation voltage between input and output, etc.

The UTC **UPC247** is suitable for programmable controllers and telecommunication equipments, etc.

■ FEATURES

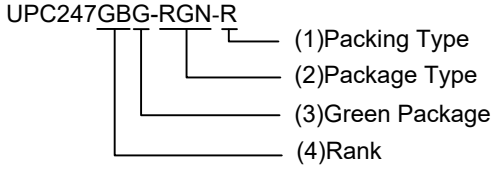
* Current transfer ratio (CTR: MIN. 50% at I_F=±5mA, V_{CE}=5V)
* Isolation voltage between input and output (V_{ISO}=3,750 Vrms)
* Employs double transfer mold technology

■ SYMBOL



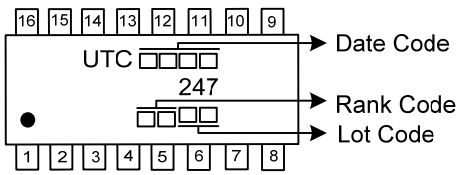
■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UPC247L-RGN-R	UPC247G-RGN-R	SSOP-16-4	Tape Reel
UPC247GBL-RGN-R	UPC247GBG-RGN-R	SSOP-16-4	Tape Reel



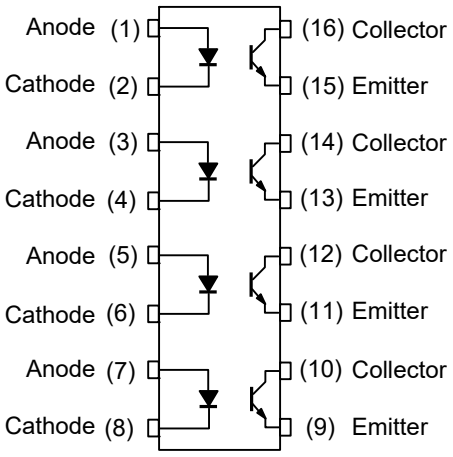
(1) R: Tape Reel
(2) RGN: SSOP-16-4
(3) G: Halogen Free and Lead Free, L: Lead Free
(4) Refer to TRANSFER CHARACTERISTICS

■ MARKING



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■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Input	Forward Current	I_F	50	mA
	Peak Forward Current (1μs, Pulse)	I_{FP}	1	A
	Reverse Voltage	V_R	6	V
	Power Dissipation	P_D	70	mW
	Derating Factor		1	mW/°C
Output	Power Dissipation	P_C	100	mW
	Derating Factor		1.5	mW/°C
	Collector Current	I_C	50	mA
	Collector-Emitter Voltage	V_{CEO}	80	V
	Emitter-Collector Voltage	V_{ECO}	7	V
Total Power Dissipation		P_{TOT}	170	mW
Isolation Voltage (Note 2)		V_{ISO}	5000	Vrms
Operating Temperature		T_{OPR}	-55 ~ +110	°C
Storage Temperature		T_{STG}	-55 ~ +125	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. AC for 1 minute, R.H.= 40~60% R.H. In this test, pins 1, 2 are shorted together, and pins 3, 4 are shorted together.

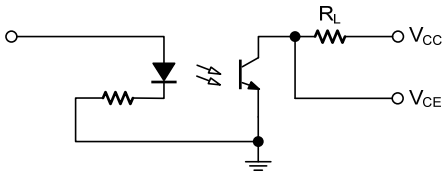
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

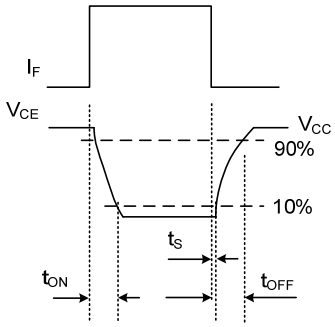
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
INPUT						
Forward Voltage	V_F	I_F=20mA		1.2	1.4	V
Reverse Current	I_R	V_R=4V			10	μA
Input Capacitance	C_{IN}	V=0, f=1kHz		30	250	pF
OUTPUT						
Collector-Emitter Dark Current	I_{CEO}	V_{CE}=20V, I_F=0mA			100	nA
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=0.1mA	80			V
Emitter-Collector Breakdown Voltage	BV_{ECO}	I_E=0.1mA	7			V

■ TRANSFER CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Current Transfer Ratio	CTR	I_F=5mA, V_{CE}=5V	UPC247	100		600	%
			UPC247GB	100		400	%
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_F=8mA , I_C=2.4mA				0.4	V
Isolation Resistance	R_{IO}	V_{IO}=500Vdc, 40~60% R.H.		5×10^{10}	1×10^{11}		Ω
Floating Capacitance	C_{IO}	V_{IO}=0, f=1MHz			0.6	1.0	pF
Cut-Off Frequency	f_C	V_{CE}=5V, I_C=2mA, R_L=100Ω, -3dB			80		kHz
Rise Time	t_R	V_{CE}=2V, I_C=2mA, R_L=100Ω			4	18	μs
Fall Time	t_F				3	18	μs

■ SWITCHING TIME TEST CIRCUIT





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