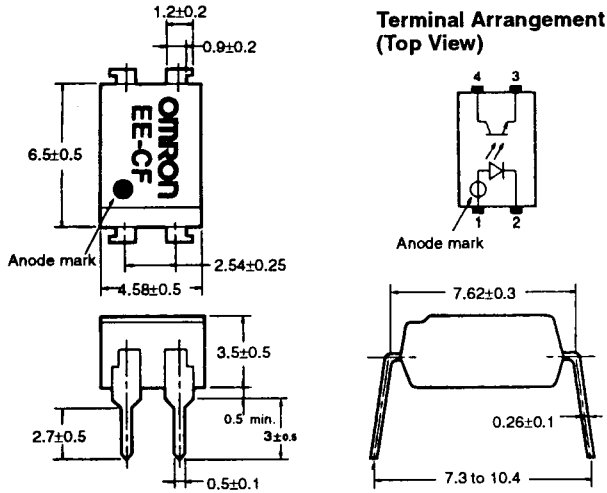


## Photo-thyristor

# EE-CF4

### ■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Unless otherwise specified, the tolerances are as shown below.

Dimensions	Tolerance
3 mm max.	±0.3
3 < mm ≤ 6	±0.375
6 < mm ≤ 10	±0.45
10 < mm ≤ 18	±0.55
18 < mm ≤ 30	±0.65

Terminal No.	Name
1	Anode
2	Cathode
3	Collector
4	Emitter

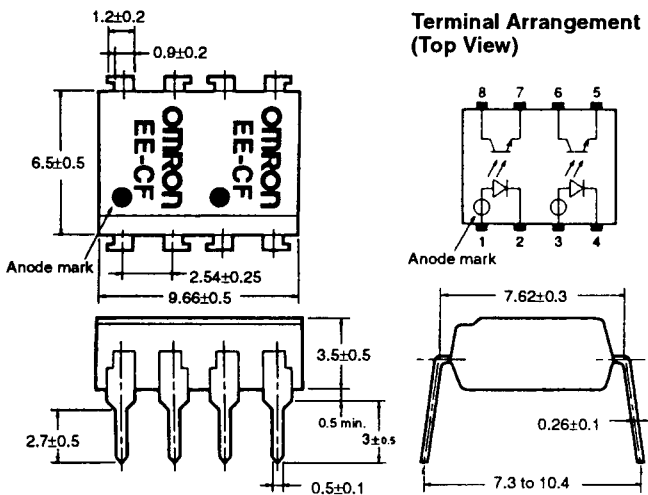
### ■ Features

- Ensures an AC insulation dielectric strength of 5 kV minimum between the input and output terminals.
- Standard DIP construction.

### ■ Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value
Emitter	Forward current	I <sub>F</sub> 50 mA (see note 1)
	Pulse forward current	I <sub>FP</sub> 1 A (see note 2)
	Reverse voltage	V <sub>R</sub> 4 V
Detector	Collector-Emitter voltage	V <sub>CEO</sub> 30 V
	Emitter-Collector voltage	V <sub>ECO</sub> 5 V
	Collector current	I <sub>C</sub> 30 mA
	Collector dissipation	P <sub>C</sub> 150 mW (see note 1)
Ambient temperature	Operating	T <sub>opr</sub> -30°C to 90°C
	Storage	T <sub>stg</sub> -55°C to 100°C
	Soldering	T <sub>sol</sub> 260°C
Package total loss	P <sub>T</sub>	500 mW

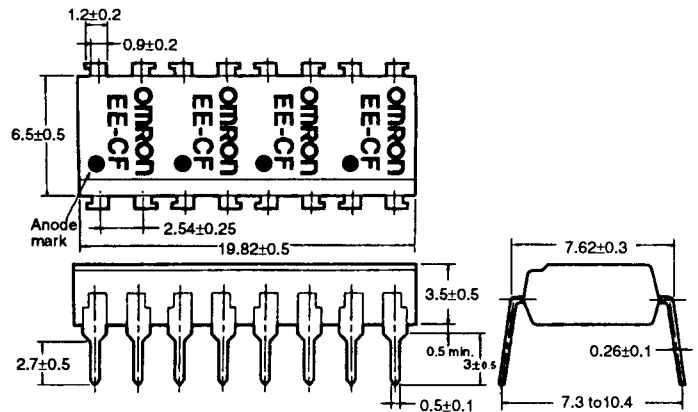
Note: 1. Refer to the temperature rating chart if the ambient temperature exceeds 25°C.  
2. The pulse width is 10 μs maximum with a frequency of 100 Hz.



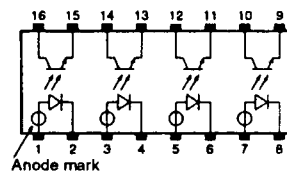
Unless otherwise specified, the tolerances are as shown below.

Dimensions	Tolerance
3 mm max.	±0.3
3 < mm ≤ 6	±0.375
6 < mm ≤ 10	±0.45
10 < mm ≤ 18	±0.55
18 < mm ≤ 30	±0.65

Terminal No.	Name
1, 3	Anode
2, 4	Cathode
5, 7	Collector
6, 8	Emitter



Terminal Arrangement (Top View)



Terminal No.	Name
1, 3, 5, 7	Anode
2, 4, 6, 8	Cathode
9, 11, 13, 15	Collector
10, 12, 14, 16	Emitter

Unless otherwise specified, the tolerances are as shown below.

Dimensions	Tolerance
3 mm max.	±0.3
3 < mm ≤ 6	±0.375
6 < mm ≤ 10	±0.45
10 < mm ≤ 18	±0.55
18 < mm ≤ 30	±0.65

Available from

■ Electrical and Optical Characteristics (Ta = 25°C)

Item		Symbol	Value	Condition
Emitter	Forward voltage	$V_F$	1.2 V typ., 1.5 V max.	$I_F = 30 \text{ mA}$
	Reverse current	$I_R$	0.01 $\mu\text{A}$ typ., 10 $\mu\text{A}$ max.	$V_R = 4 \text{ V}$
Detector	Dark current	$I_D$	200 nA max.	$V_{CE} = 10 \text{ V}$
	Collector–Emitter saturated voltage	$V_{CE}(\text{sat})$	0.4 V max.	$I_F = 20 \text{ mA}$ , $I_C = 2 \text{ mA}$
	Capacitance between collector and emitter	$C_{CE}$	6 pF typ.	$V_{CE} = 0 \text{ V}$
	Capacitance between collector and base	$C_{CB}$	40 pF typ.	$V_{CE} = 0 \text{ V}$
Response frequency		$f_T$	70 kHz typ.	$V_{CC} = 10 \text{ V}$ , $I_F = 10 \text{ mA}$ , $R_L = 100 \Omega$ , -3dB point
Conversion rate		CTR	50% min.	$I_F = 10 \text{ mA}$ , $V_{CE} = 10 \text{ V}$
Insulation dielectric strength		Viso	5 kVAC min.	For 1 min, RH = 40% to 60%
Insulation resistance		Riso	$10^{12} \Omega$ typ.	500 V, RH = 40% to 60%
Coupling capacitance		Ciso	1 pF typ.	RH = 40% to 60%
Rising time		$t_r$	3 $\mu\text{s}$ typ.	$V_{CC} = 2 \text{ V}$ , $R_L = 100 \Omega$ , $I_L = 2 \text{ mA}$
Falling time		$t_f$	3 $\mu\text{s}$ typ.	$V_{CC} = 2 \text{ V}$ , $R_L = 100 \Omega$ , $I_L = 2 \text{ mA}$

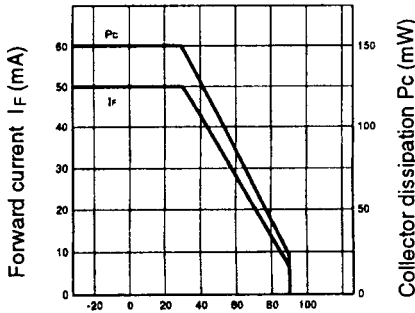
Available from

	DGE Systems Pty Ltd
	103 Broadmeadow Road
	Broadmeadow, NSW, 2292
	Phone: (02) 4961 3311
	Fax: (02) 4969 5067
	Free Call: 1800 818 736
PTY LTD	Email: <a href="mailto:dgesales@dge.com.au">dgesales@dge.com.au</a>
	Web: <a href="http://www.dge.com.au">www.dge.com.au</a>

Available from

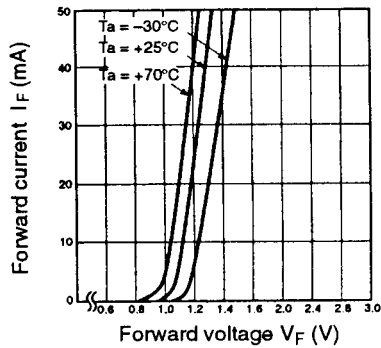
■ Engineering Data

Forward Current vs. Collector Dissipation Temperature Rating

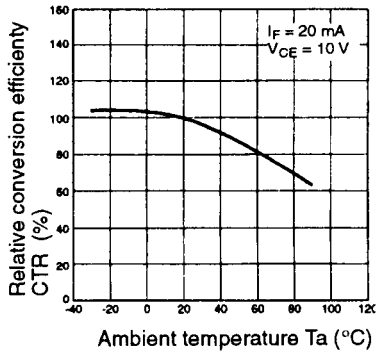


Ambient temperature  $T_a$  (°C)

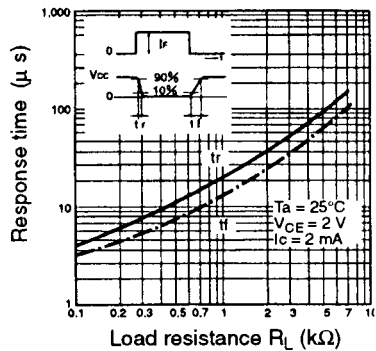
Forward Current vs. Forward Voltage Characteristics (Typical)



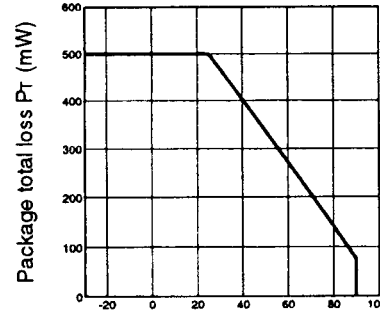
Conversion Efficiency vs. Ambient Temperature Characteristics (Typical)



Response Time vs. Load Resistance Characteristics (Typical)

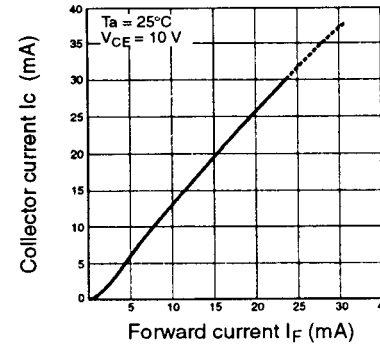


Package Total Loss Temperature Characteristics

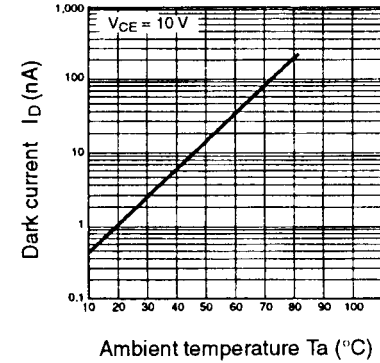


Ambient temperature  $T_a$  (°C)

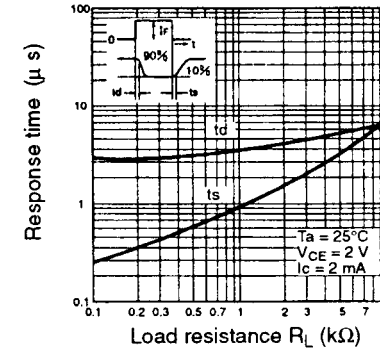
Collector Current vs. Forward Current Characteristics (Typical)



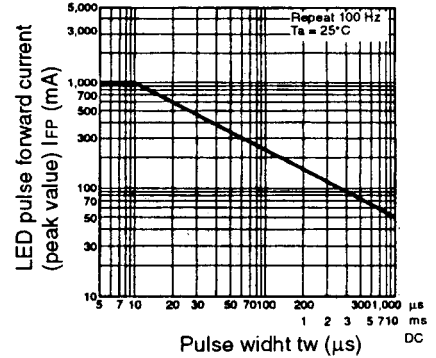
Dark Current vs. Ambient Temperature Characteristics (Typical)



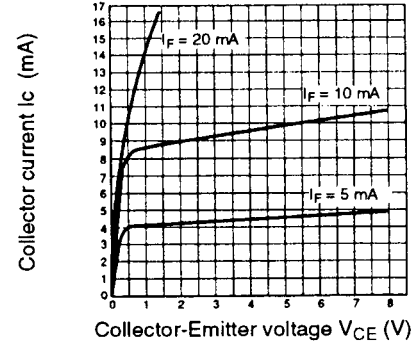
Response Time vs. Load Resistance Characteristics (Typical)



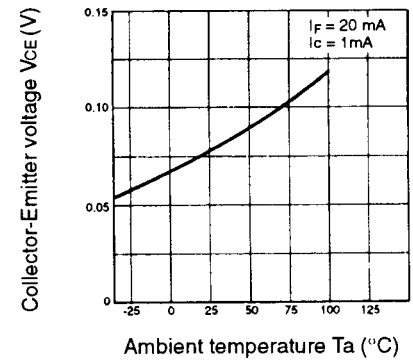
Pulse Forward Current Characteristics



Collector Current vs. Collector-Emitter Voltage Characteristics (Typical)



Collector-Emitter Voltage vs. Ambient Temperature Characteristics (Typical)



Available from