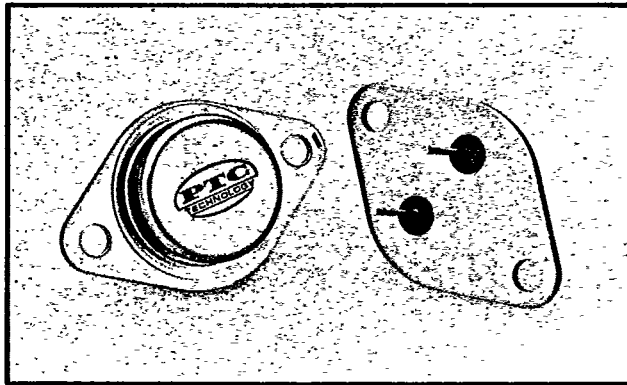




**Power Technology Components**

**PTC 16018  
1.5KV Powermode  
Transistor**



**HIGH VOLTAGE  
NPN TRANSISTOR  
10 AMPERES  
1500 VOLTS**

**FEATURES**

- High Voltage Rating 1500 Volts
- High Current Rating 10 Amperes
- Superior Resistance to Thermal Fatigue
- Industrial and Military Applications

**APPLICATIONS**

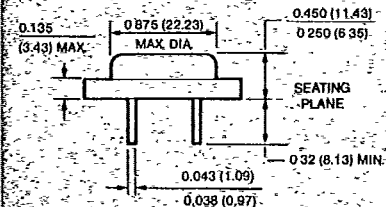
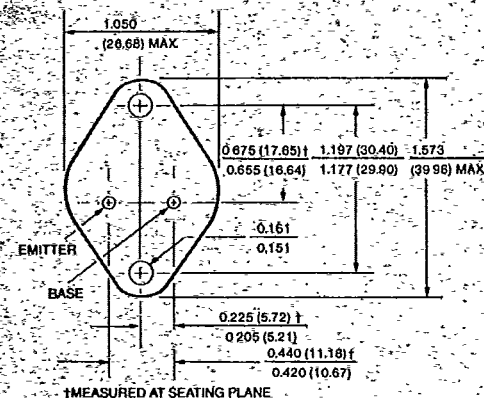
- Switching Regulators
- PWM Inverters
- Deflection Circuits
- Motor Controls
- Solenoid Drivers

**SPECIFICATIONS**

**General**

The PTC 16018 series transistors are high-voltage, high-gain, NPN, 10 ampere switching transistors for Industrial and Military Service.

The series is particularly well suited to off-line (transformerless) switching power supplies. Other applications include PWM Inverters, Motor Controls, Relay and Solenoid Drivers, Deflection Circuits and Pulse Modulators.



Basic dimensions in inches.

Dimensions shown in PARENTHESES are in millimeters.

**Package Outline  
JEDEC TO-204AA  
(Formerly JEDEC TO-3)**

**Power Technology Components**  
A Microsemi Company  
23201 South Normandie Avenue  
Torrance, California 90501  
(213) 534-3737 TLX 664276 FAX 213-530-5609

## SERIES PTC 16018

### High Voltage Fast Switching NPN Transistor

#### Absolute maximum ratings

Description	PTC16018	Unit	Conditions
V <sub>CEV</sub> Collector-Emitter Voltage	1500	Volts	
V <sub>CEO</sub> Collector-Emitter Voltage	800	Volts	
I <sub>c</sub> Collector Current Continuous	10	A	
I <sub>c</sub> Collector Current Peak	15	A	
I <sub>b</sub> Base Current Continuous	5	A	
I <sub>b</sub> Base Current Peak	8	A	
P <sub>D</sub> Maximum Power Dissipation	175	W	T <sub>c</sub> = 25°C
I <sub>e</sub> Emitter Current Continuous	10	A	
I <sub>e</sub> Emitter Current Peak	15	A	

#### Electrical characteristics at 25°C (unless otherwise specified)

Description	PTC16018			Conditions
	Minimum	Maximum	Unit	
V <sub>CEO(sus)</sub> Collector-Emitter Sustaining Voltage	800		V	100mA, L = 200 μH
I <sub>CEV</sub> Collector Cutoff Current		.25	mA	V <sub>CEV</sub> = 1500V V <sub>BE</sub> (OFF) = 1.5V
		1.5	mA	V <sub>CEV</sub> = 1500V V <sub>BE</sub> (OFF) = 1, 5V T <sub>c</sub> = 100°C
I <sub>EBO</sub> Emitter Cutoff Current		0.1	mA	V <sub>EB</sub> = 6V
V <sub>CE(sat)</sub> Collector-Emitter Saturation Voltage <b>1</b>		1.0	V	I <sub>c</sub> = 5A, I <sub>b</sub> = 2A
		5.0	V	I <sub>c</sub> = 10A, I <sub>b</sub> = 5A
V <sub>BE(sat)</sub> Base-Emitter Saturation Voltage <b>1</b>		1.5	V	I <sub>c</sub> = 5A, I <sub>b</sub> = 2A
h <sub>FE</sub> DC Current Gain <b>1</b>	4			I <sub>c</sub> = 5A, V <sub>CE</sub> = 5V
COB Output Capacitance		450	pF	V <sub>CB</sub> = 10V, f = 1KHZ

#### Switching characteristics (Resistive Load)

Description	Maximum	Unit	Conditions
t <sub>d</sub> Delay Time	.2	μs	I <sub>c</sub> = 5A, V <sub>CC</sub> = 250V I <sub>B1</sub> = 2A, I <sub>B2</sub> = 4A P.W. = 25 μs, Duty Cycle = 2%
t <sub>r</sub> Rise Time	2.0	μs	
t <sub>s</sub> Storage Time	4.5	μs	
t <sub>f</sub> Fall Time	.4	μs	

#### Thermal and mechanical characteristics

Description	Typical	Minimum	Maximum	Unit	Conditions
R <sub>θJC</sub> Thermal Resistance Junction to Case	All		1.0	°C/W	
Maximum Lead Temp. for Soldering Purposes: 1/8" from Case for 5 Sec.			275	°C	
t <sub>J</sub> , t <sub>STG</sub> Operating & Storage Junct. Temperature Range		-65	200°	°C	

**1** PULSE TEST: PW = 300 μs, DUTY CYCLE ≤ 2%