

# MICRO ELECTRONICS

BC445  
BC446

SILICON  
EPITAXIAL TRANSISTOR

## DESCRIPTION

BC445 (NPN) and BC446 (PNP) are silicon planar transistor designed for use as high voltage driver and output transistor. Particularly suitable as power darlington drivers.

TO-92F



CBE

## ABSOLUTE MAXIMUM RATINGS

Collector-Emitter Voltage	$V_{CE0}$	60V
Collector-Base Voltage	$V_{CB0}$	60V
Emitter-Base Voltage	$V_{EB0}$	5V
Collector Current-Continuous	$I_C$	300mA
Total Power Dissipation @ $T_A=25^{\circ}C$	$P_{tot}$	625mW
Derate above $25^{\circ}C$		5mW/ $^{\circ}C$
Total Power Dissipation @ $T_C=25^{\circ}C$	$P_{tot}$	1.5W
Derate above $25^{\circ}C$		12mW/ $^{\circ}C$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to $+150^{\circ}C$

## ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}C$ unless otherwise specified)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	60			V	$I_C=1mA$ $I_B=0$
Collector-Base Breakdown Voltage	$BV_{CB0}$	60			V	$I_C=100\mu A$ $I_E=0$
Emitter-Base Breakdown Voltage	$BV_{EB0}$	5			V	$I_E=10\mu A$ $I_C=0$
Collector Cutoff Current	$I_{CB0}$			100	nA	$V_{CB}=30V$ $I_E=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.1	0.25	V	$I_C=100mA$ $I_B=10mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.85		V	$I_C=100mA$ $I_B=10mA^*$
Base-Emitter Voltage	$V_{BE}$		0.8	1.2	V	$I_C=100mA$ $V_{CE}=5V^*$
Current Gain-Bandwidth Product	$f_T$	100	250		MHz	$I_C=50mA$ $V_{CE}=5V$ $f=100MHz$
Output Capacitance	$C_{ob}$		3		pF	$V_{CB}=10V$ $I_E=0$
Input Capacitance	$C_{ib}$		16		pF	$V_{EB}=0.5V$ $I_C=0$

\* Pulse Test : Pulse Width =  $300\mu s$ , Duty Cycle = 2%.

## D.C. Current Gain ( $H_{FE}$ ) @ $V_{CE}=5V$

at $I_C$ (Pulsed)	Full Range		Group A		Group B	
	min	max	min	max	min	max
2mA	50	460	120	220	180	460
10mA	50		100		160	
100mA	50		60		90	

MICRO ELECTRONICS LTD. 美科有限公司

38 Hung To Road, Kwun Tong, Kowloon, Hong Kong. Cable: Microtron, Hong Kong. Telex: 43510 Micro HX.  
P.O. Box 69477, Kwun Tong. Tel: 3-430181-6 3-893363, 3-892423, 3-898224 FAX: 3-410321