

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

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

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

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

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

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	

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