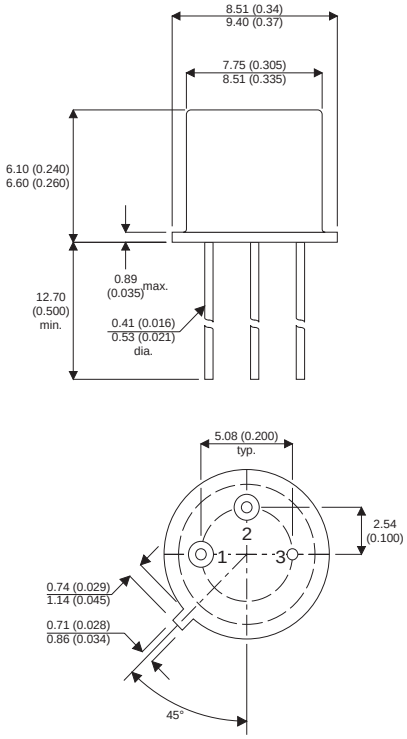
BFY50

MECHANICAL DATA
Dimensions in mm (inches)



TO39 PACKAGE (TO-205AD)

Underside View

Pin 1 = Emitter Pin 2 = Base Pin 3 = Collector

MEDIUM POWER AMPLIFIERS NPN SILICON PLANAR TRANSISTOR

Description

The BFY50 is a Silicon Planar Epitaxial NPN Transistor in Jedec TO39 metal case. they are intended for general purpose linear and switching applications

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage	80V
V_{CEO}	Collector – Emitter Voltage	35V
V_{EBO}	Emitter – Base Voltage	6V
I_C	Collector Current	1A
I_{CM}	Collector Peak Current	1.5A
P_{TOT}	Total Power Dissipation @ $T_{amb} \leq 25°C$	0.8W
	@ $T_{case} \leq 25°C$	5W
T_{stg}, T_j	Storage and Operatuing Junction Temperature	–65 to 200°C
$R_{j\text{-}case}$	Thermal Resistance Junction to Case	35°C / W
$R_{j\text{-}amb}$	Thermal Resistance Junction to Ambient	218°C / W

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SEME LAB

BFY50

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)CBO*}$	Collector – Base Breakdown Voltage	I_C = 100µA	I_E = 0	80			V
$V_{(BR)CEO*}$	Collector – Emitter Breakdown Voltage	I_C = 30mA	I_B = 0	35			
$V_{(BR)EBO*}$	Emitter – Base Breakdown Voltage	I_C = 0	I_E = 100µA	6			
I_{CBO}	Collector Cut-off Current	V_{CB} = 60V	I_E = 0			50	nA
			T_C = 100°C			2.5	µA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V	I_C = 0			50	nA
			T_C = 100°C			2.5	µA
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	I_C = 150mA	I_E = 15mA		0.14	0.2	V
		I_C = 1A	I_B = 0.1A		0.7	1	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	I_C = 150mA	I_B = 15mA		0.95	1.3	V
		I_C = 1A	I_B = 0.1A		1.5	2	
h_{FE*}	DC Current Gain	I_C = 10mA	V_{CE} = 10V	20	40		—
		I_C = 150mA	V_{CE} = 10V	30	55		
		I_C = 1mA	V_{CE} = 10V	15	30		

DYNAMIC CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions			Min.	Typ.	Max.	Unit
h_{fe}	Small Signal Current Gain	V_{CE} = 6V	I_C = 1mA	f = 1kHz		25		—
		V_{CE} = 6V	I_C = 10mA	f = 1KHz		45		
h_{ie}	Imput Impedance	V_{CE} = 5V	I_C = 10mA	f = 1.KHz		180		Ω
h_{rE}	Reverse Voltage Ratio	V_{CE} = 5V	I_C = 10mA	f = 1.KHz			55 x10^{-6}	—
hoe	Output Admittance	V_{CE} = 5V	I_C = 10mA	f = 1.KHz		30		µS
C_{cbo}	Collector -Base Capacitance	V_{CB} = 10V	I_E = 0	f = 1.MHz		10		pF
f_T	Transistion Frequency	V_{CE} = 10V	I_C = 50mA		60	100		MHz
t_d	Delay Time	I_C = 150mA	V_{CC} = 10V			15		ns
t_r	Rise Time	I_{B1}= 15mA	V_{BE} = -2V			40		
t_s	Storage Time	I_C = 150mA	V_{CC} = 10V			300		
t_f	Fall Time	I_{B1}= -I_{B2} = 15mA				60		

Pulse Duration = 300µs, Duty Cycle = 1%

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