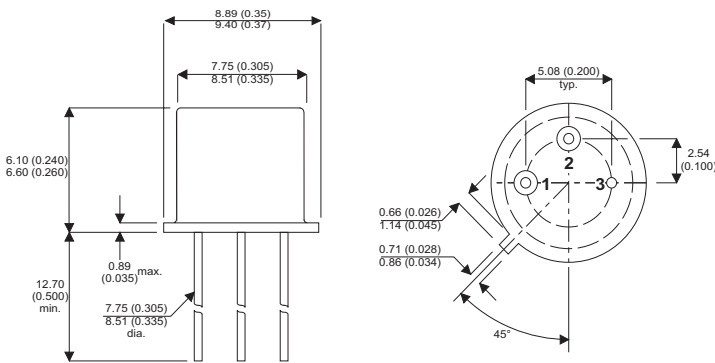


MECHANICAL DATA

Dimensions in mm (inches)



**HIGH VOLTAGE, HIGH CURRENT
SILICON EXPITAXIAL PLANAR
NPN TRANSISTOR**

APPLICATIONS

**Intended for High Voltage, High Current,
Switching Applications up to 7A.**

TO-39 PACKAGE

Pin 1 – Emitter Pin 2 – Base Pin 3 – Collector

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

			BUY47	BUY48
V_{CBO}	Collector – Base Voltage	($I_E = 0$)	150V	200V
V_{CEO}	Collector – Emitter Voltage	($I_B = 0$)	120V	170V
V_{EBO}	Emitter – Base Voltage	($I_C = 0$)		6V
I_C	Collector Current			7A
I_{CM}	Peak Collector Current (repetitive)			10A
P_{tot}	Total Power Dissipation	@ $T_{amb} \leq 25^{\circ}C$		1W
		@ $T_{case} \leq 50^{\circ}C$		10W
T_{STG}	Storage Temperature Range			-65 to +200°C
T_J	Maximum Operating Junction Temperature			200°C

ELECTRICAL CHARACTERISTICS

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO} Collector Cut-off Current	V _{CB} = 80V	BUY47		10	μA
	I _E = 0	T _C = 125°C		1	mA
	V _{CB} = 100V	BUY48		10	μA
	I _E = 0	T _C = 125°C		1	mA
V _{(BR)CBO} * Collector – Base Breakdown Voltage	I _C = 1mA	BUY47		150	V
	I _E = 0	BUY48		200	
V _{CEO(sus)} * Collector – Emitter Sustaining Voltage	I _C = 20mA	BUY47		120	V
	I _B = 0	BUY48		170	
V _{EBO} * Emitter – Base Voltage	I _E = 1mA	I _C = 0	6		V
V _{CE(sat)} * Collector – Emitter Saturation Voltage	I _C = 0.5A	I _B = 50mA	0.05		V
	I _C = 2A	I _B = 0.2A	0.45		
	I _C = 5A	I _B = 0.5A	1		
V _{BE(sat)} * Base – Emitter Saturation Voltage	I _C = 0.5A	I _B = 50mA	0.8		V
	I _C = 2A	I _B = 0.2A	1.1		
	I _C = 5A	I _B = 0.5A	1.5		
h _{FE} * DC Current Gain	I _C = 50mA	V _{CE} = 5V	130		—
	I _C = 0.5A	V _{CE} = 5V	40	150	
	I _C = 2A	V _{CE} = 5V	40	130	
	I _C = 5A	V _{CE} = 5V	15	45	
f _T Transition Frequency	I _C = 100mA	V _{CE} = 10V	90		MHz
C _{CBO} Collector – Base Capacitance	I _E = 0	V _{CB} = 50V	45	80	pF
t _{on} Turn-On Time	I _C = 5A	V _{CC} = 40V	1		μs
t _{off} Fall Time	I _{B1} = -I _{B2} = 0.5A	2			

NOTES

 * Pulse Test: t_p = 300μs, δ = 1.5%