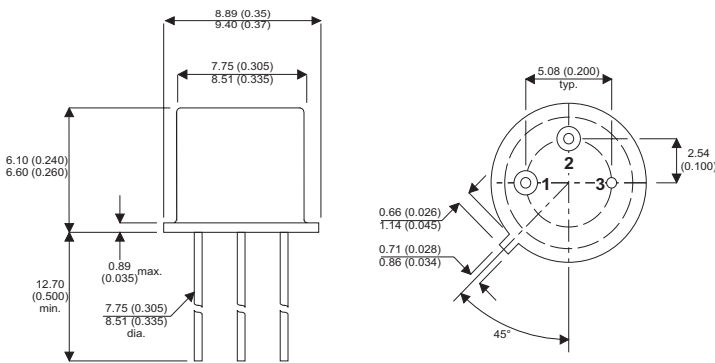


MECHANICAL DATA

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 I _E = 0	BUY47		10	μA	
		T _C = 125°C		1	mA	
	V _{CB} = 100V I _E = 0	BUY48		10	μA	
		T _C = 125°C		1	mA	
V _{(BR)CBO} * Collector – Base Breakdown Voltage	I _C = 1mA I _E = 0	BUY47		150	V	
		BUY48		200		
V _{CEO(sus)} * Collector – Emitter Sustaining Voltage	I _C = 20mA I _B = 0	BUY47		120	V	
		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 f = 1MHz 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%