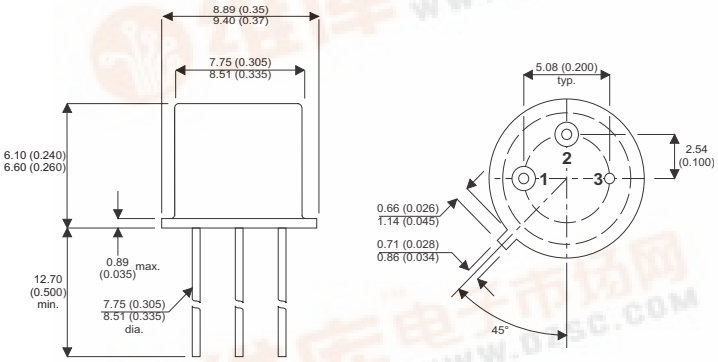
SEME LAB

BUY47
BUY48

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°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} ≤ 25°C	1W	
		@T_{case} ≤ 50°C	10W	
T_{STG}	Storage Temperature Range		–65 to +200°C	
T_J	Maximum Operating Junction Temperature		200°C	

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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 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%