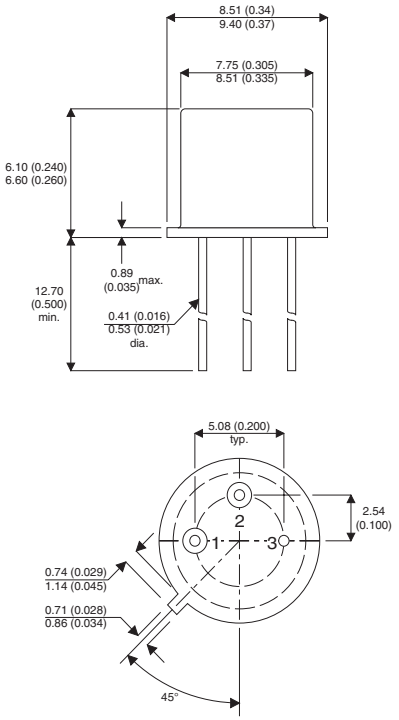
BUY47
BUY48

MECHANICAL DATA
Dimensions in mm (inches)



TO–39 PACKAGE (TO-205AD)

Underside View

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

HIGH VOLTAGE, HIGH CURRENT SILICON EXPITAXIAL PLANAR NPN TRANSISTOR

APPLICATIONS

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

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} = 25°C	10W	
T_{STG}	Storage Temperature Range		–65 to +200°C	
T_J	Maximum Operating Junction Temperature		200°C	
$R_{\theta JA}$	Thermal Resistance Junction - Air		175 °C/W	
$R_{\theta JC}$	Thermal Resistance Junction - Case		15°C/W	

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

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BUY47
BUY48

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%

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