SILICON NPN TRANSISTOR

TT electronics
Semelab Limited

BDY54

- High Power
- Hermetic TO-3 Metal Package
- Ideally suited for Switching and Amplifier Applications
- Screening Options Available

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage		180V
V_{CEO}	Collector – Emitter Voltage		120V
V_{EBO}	Emitter – Base Voltage		7V
I_C	Continuous Collector Current		12A
I_B	Base Current		5A
P_D	Total Power Dissipation at	T_C = 25°C	60W
		Derate Above 25°C	0.35W/°C
T_J	Junction Temperature Range		-65 to +200°C
T_{stg}	Storage Temperature Range		-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	2.9	°C/W

SEMELAB
A subsidiary of TT electronics plc.

Semelab Limited Coventry Road, Lutterworth, Leicestershire, LE17 4JB
Telephone +44 (0) 1455 556565 Fax +44 (0) 1455 552612 Email: sales@semelab-tt.com Website: http://www.semelab-tt.com

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
I_{CEX}	Collector Cut-Off Current	V_{CE} = 150V	V_{BE} = -1.5V T_C = 150°C			15	mA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 7V	I_C = 0			3	
$V_{(BR)CEO}$ (1)	Collector – Emitter Breakdown Voltage	I_C = 100mA	I_B = 0	120			V
h_{FE} (1)	Static Forward-Current Transfer Ratio	V_{CE} = 1.5V	I_C = 2A	20		60	-
$V_{CE(sat)}$ (1)	Collector – Emitter Saturation Voltage	I_C = 4A	I_B = 0.4A			1.1	V
		I_C = 7A	I_B = 1.4A			2.2	
$V_{BE(sat)}$ (1)	Base – Emitter Saturation Voltage	I_C = 4A	I_B = 0.4A			2	
		I_C = 7A	I_B = 1.4A			2.5	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	V_{CE} = 4V f = 10MHz	I_C = 0.5A	20			MHz
t_{on}	Turn-On Time	I_C = 5A	I_B = 1.0A		0.15		µs
t_{off}	Turn-Off Time	I_C = 5A I_{B2} = -1.0A	I_{B1} = 1.0A		1.2		

Notes
(1) Pulse Width ≤ 380us, δ ≤ 2%

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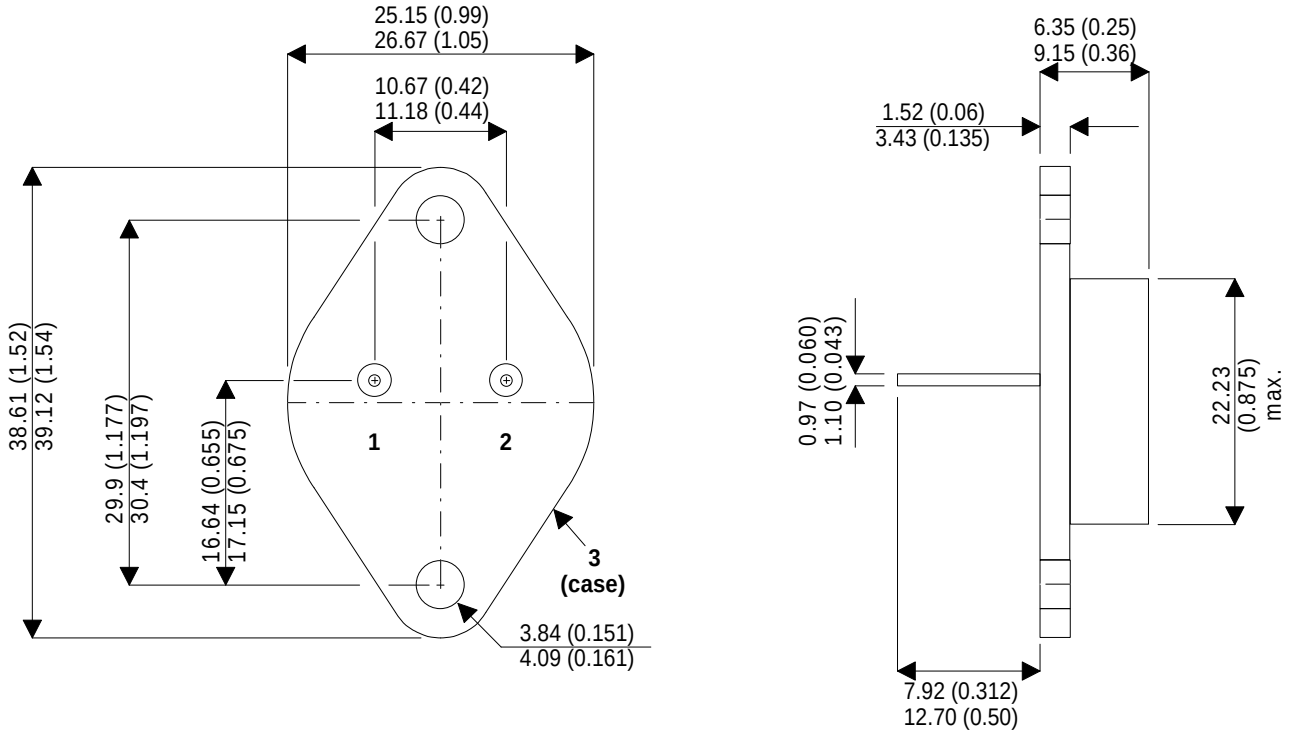
MECHANICAL DATA
Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE
Underside View

Pin 1 - Base Pin 2 - Emitter Case - Collector