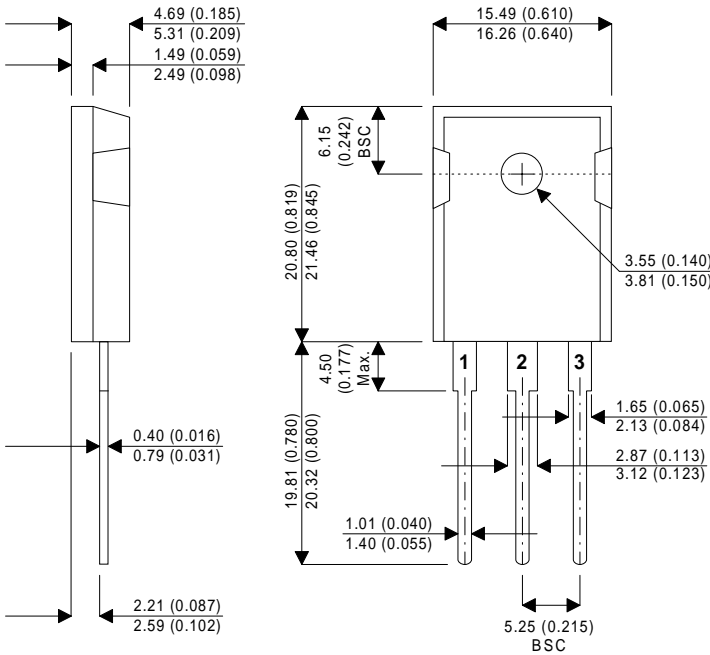


**MECHANICAL DATA**

Dimensions in mm



**TO247**

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

**NPN MULTI-EPITAXIAL TRANSISTOR**

**FEATURES**

- DIFFUSED BY SEMEFAB
- VERY LOW SATURATION VOLTAGES
- VERY FAST SWITCHING (t = 60ns)
- HIGH RELIABILITY

**APPLICATIONS**

- HIGH FREQUENCY AND HIGH EFFICIENCY CONVERTERS
- SWITCHING REGULATORS
- MOTOR CONTROLS

The BUP56 is a very fast switching, very low saturation, high power transistor using wafer diffused by Semefab. It is particularly suited to applications requiring efficient, fast switching devices.

**ABSOLUTE MAXIMUM RATINGS** (T<sub>case</sub> = 25°C unless otherwise stated)

V <sub>CEX</sub>	Collector – Emitter Voltage (V <sub>BE</sub> = -1.5V)	150V
V <sub>CEO</sub>	Collector – Emitter Voltage (I <sub>B</sub> = 0)	60V
V <sub>EBO</sub>	Emitter – Base Voltage	10V
I <sub>C</sub>	Collector Current	30A
I <sub>C(PK)</sub>	Peak Collector Current	40A
P <sub>tot</sub>	Total Dissipation at T <sub>case</sub> = 25°C	150W
T <sub>stg</sub>	Storage Temperature	-55 to 175°C
T <sub>J</sub>	Maximum Operating Junction Temperature	175°C
R <sub>th</sub>	Thermal Resistance (junction-case)	1.0°C/W

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(sus)}$ Collector Emitter Sustaining Voltage	$I_C = 100mA$	60			V
$I_{CEX}$ Collector Cut-Off Current	$V_{BE} = -1.5V$ $V_{CEX} = 154$ $T_C = 150^{\circ}C$			0.1 5	mA
$I_{EBO}$ Emitter Cut-Off Current	$V_{BE} = 8V$			0.1	mA
$V_{CE(sat)^*}$ Collector – Emitter Saturation Voltage	$I_C = 15A$ $I_B = 1.5A$		0.4	0.7	V
	$I_C = 30A$ $I_B = 3A$		0.7	1.0	
$V_{BE(sat)}$ Base – Emitter Saturation Voltage	$I_C = 15A$ $I_B = 1.5A$		1.1	1.4	V
	$I_C = 30A$ $I_B = 3A$		1.4	1.7	
$h_{FE}$ DC Current Gain	$I_C = 15A$ $V_{CE} = 4V$	25	30		—
	$I_C = 30A$ $V_{CE} = 4V$	15	22		

**SWITCHING CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

$t_{on}$ On Time	$I_C = 20A$ $V_{CC} = 60V$ $I_{B1} = 2A$ $I_{B2} = 2A$		0.2	0.5	$\mu S$
$t_s$ Storage Time				0.7	
$t_f$ Fall Time				0.15	