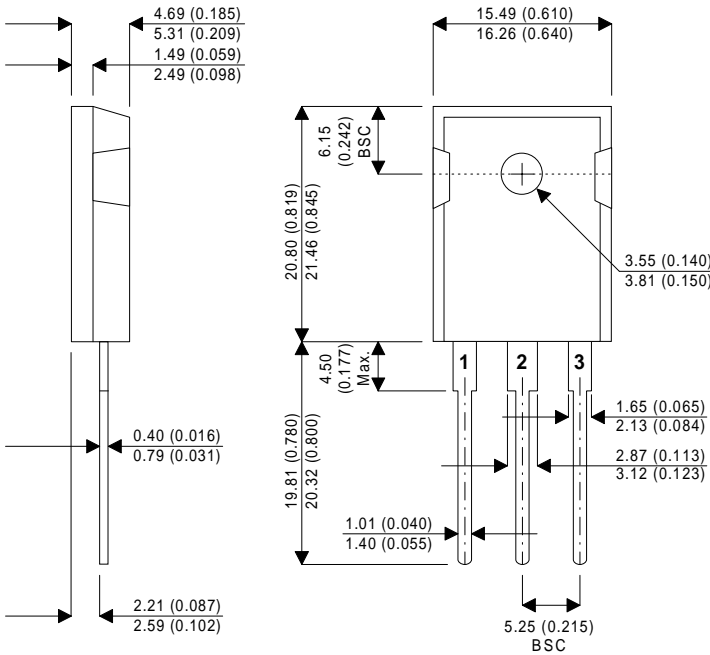


MECHANICAL DATA

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_{case} = 25°C unless otherwise stated)

V _{CEX}	Collector – Emitter Voltage (V _{BE} = -1.5V)	150V
V _{CEO}	Collector – Emitter Voltage (I _B = 0)	60V
V _{EBO}	Emitter – Base Voltage	10V
I _C	Collector Current	30A
I _{C(PK)}	Peak Collector Current	40A
P _{tot}	Total Dissipation at T _{case} = 25°C	150W
T _{stg}	Storage Temperature	-55 to 175°C
T _J	Maximum Operating Junction Temperature	175°C
R _{th}	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	μS
t_s Storage Time				0.7	
t_f Fall Time				0.15	