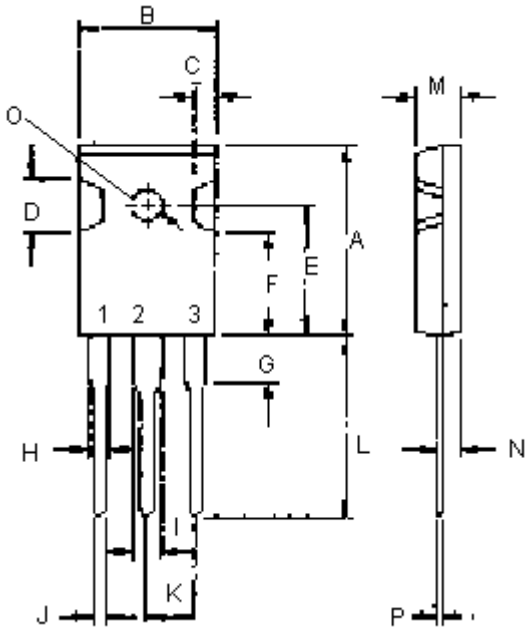
BUV48A

Power Transistor

High Voltage Switching

TO - 247



Features:

- Collector - emitter sustaining voltage - $V_{CEO\ (sus)}$ = 450 V (minimum)
- Collector - emitter saturation voltage - $V_{CE\ (sat)}$ = 1.5 V (maximum) at I_C = 8 A
- Switching time - t_f = 0.8 µs (maximum) at I_C = 8 A

Application:

Switch mode series NPN Power Transistors are designed for use in high-voltage, high speed, power switching regulators, converters, inverters, motor control system application

Dimensions	Minimum	Maximum
A	20.63	22.38
B	15.38	16.2
C	1.9	2.7
D	5.1	6.1
E	14.81	15.22
F	11.72	12.84
G	4.2	4.5
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.5	21.5
M	4.68	5.36
N	2.4	2.8
O	3.25	3.65
P	0.55	0.7

Dimensions : Millimetres

Pin

1. Base
2. Collector
3. Emitter

Maximum Ratings

Characteristics	Symbol	TIP42A	Unit
Collector - emitter voltage	V_{CEO}	450	V
Collector - emitter voltage (V_{BE} = -2.5 V)	V_{CEX}	1,000	V
Emitter - base voltage	V_{EBO}	7	V
Collector current - continuous - peak	I_C I_{CM}	15 30	A
Base current	I_B	4	A
Total power dissipation at T_c = 25°C derate above 25°C	P_D	150 1	W W/°C
Operating and storage Junction temperature range	T_j, T_{stg}	-65 to +175	°C

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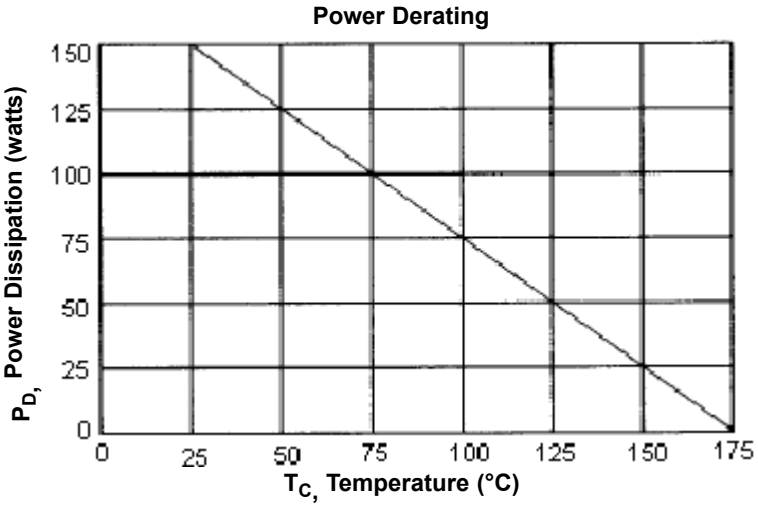
Thermal Characteristics

Characteristic	Symbol	Maximum	Unit
Thermal resistance junction to case	$R_{\theta jc}$	1	°C/W



Electrical Characteristics (T_C = 25°C Unless Otherwise noted)

Characteristics		Symbol	Minimum	Maximum	Units
Off Characteristics					
Collector - emitter sustaining voltage (1) (I_C = 200 mA, I_B = 0, L = 25 mH)		$V_{CEO\ (SUS)}$	450	-	V
Collector cut off current (V_{CE} = V_{CEX}, V_{BE} = -2.5 V) (V_{CE} = V_{CEX}, V_{BE} = -2.5 V, TC = 125°C)		I_{CEX}	-	0.2 2	mA
Collector cut off current (V_{CE} = V_{CEX}, R_{BE} < 10Ω) (V_{CE} = V_{CEX}, R_{BE} < 10Ω, TC = 125°C)		I_{CER}	-	0.5 4	mA
Emitter cut off current (V_{EB} = 5 V, I_C = 0)		I_{EBO}	-	1	mA
On Characteristics (1)					
Collector - emitter saturation voltage (I_C = 8 A; I_B = 1.6 A) (I_C = 12 A; I_B = 2.4 A)		$V_{CE\ (sat)}$	-	1.5 5	V
Base-emitter saturation voltage (I_C = 8 A; I_B = 1.6 V)		$V_{BE\ (sat)}$	-	1.6	V
Switching characteristics					
Turn on time	IC = 8A, IB1 = 1.6A, IB2 = -1.6A	t_{on}	-	1	µs
Storage time		t_s	-	3	µs
Fall time		t_f	-	0.8	µs

(1) Pulse test: Pulse width = 300 µs, duty cycle ≤ 2%

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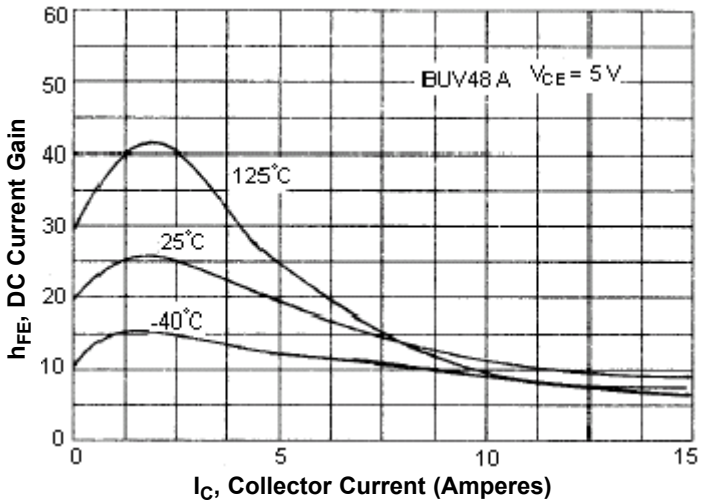
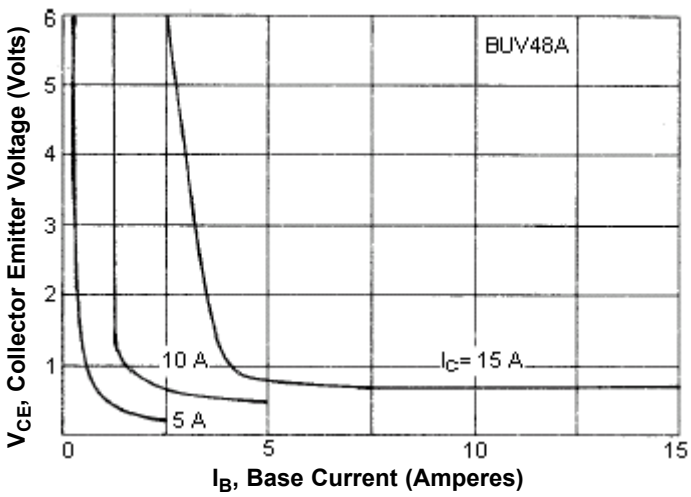
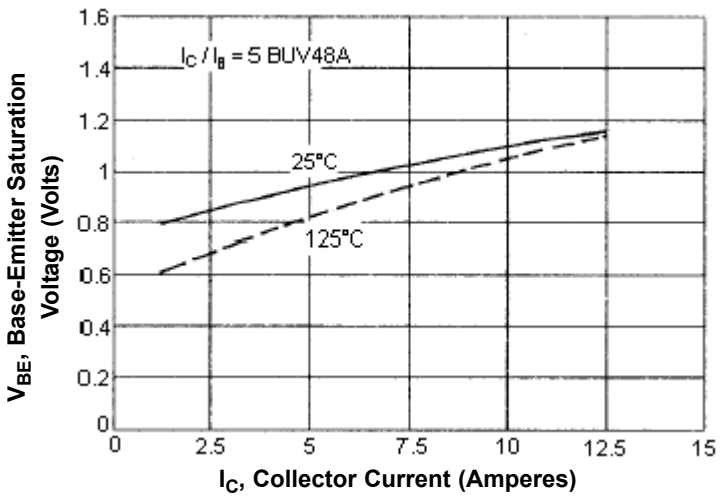
DC Current Gain



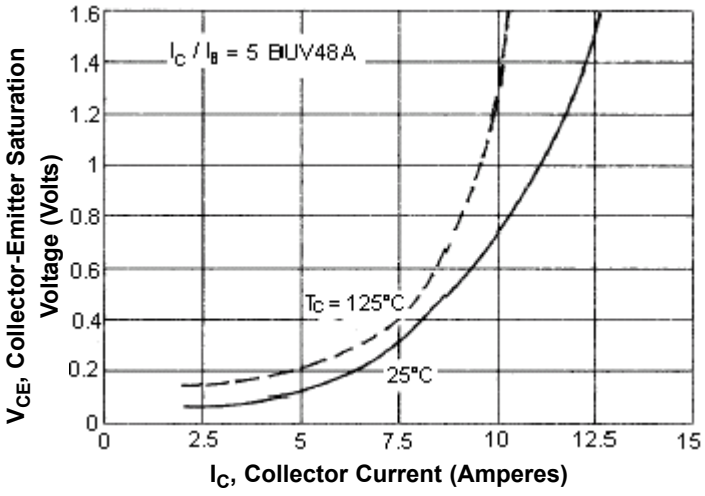
Collector Saturation Region



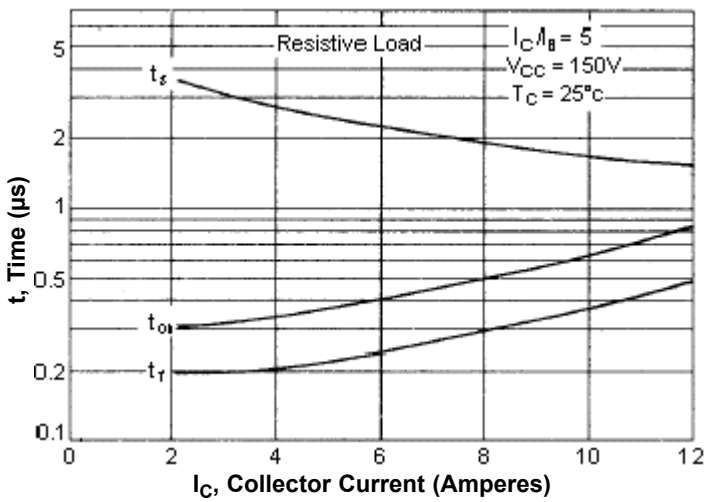
Base-Emitter Saturation Voltage



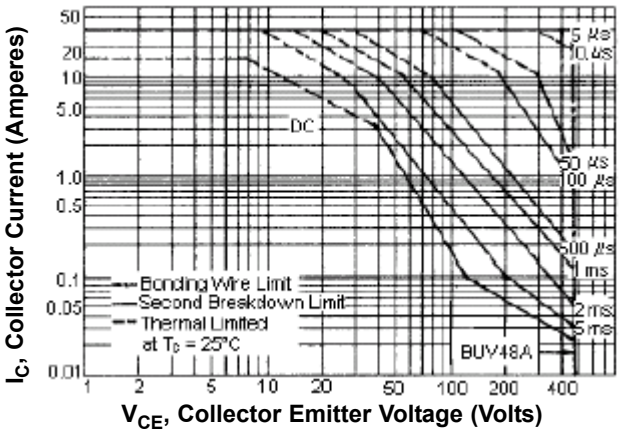
Collector-Emitter Saturation Voltage



Switching Time



Active Region Safe Operating Area



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Specifications Table

Description	$I_{C\ (av)}$ Maximum (A)	V_{CEO} maximum (V)	V_{CEX} maximum (V)	$V_{CE(Sat)}$ (V) at I_C = 12 A	t_f maximum (µs)	P_{tot} at 25°C (W)	Part Number
Power Transistor	15	450	1,000	5	0.8	150	BUV48A