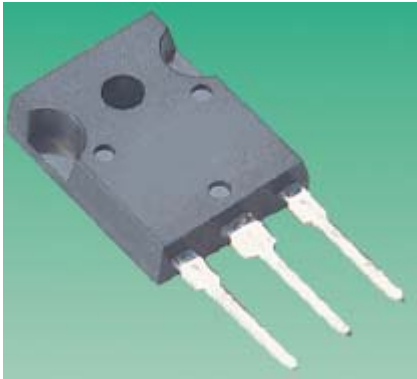


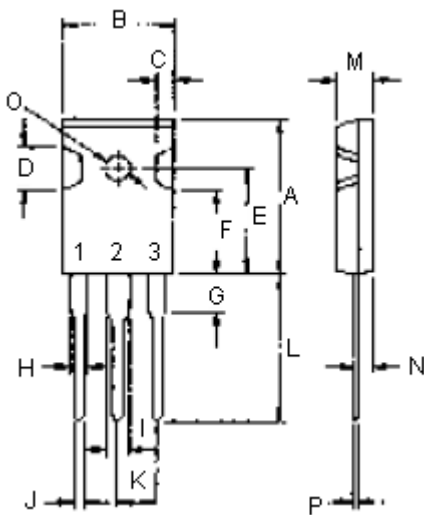
Power Transistor



Switchmode series NPN power transistors are designed for use in high-voltage, high-speed, power switching regulators, converters, inverters, motor control system application

Features:

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



Pin 1. Base
2. Collector
3. Emitter

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

NPN
BUV48A

15 A
Power
Transistor
450 V
150 W



TO-247

Maximum Ratings

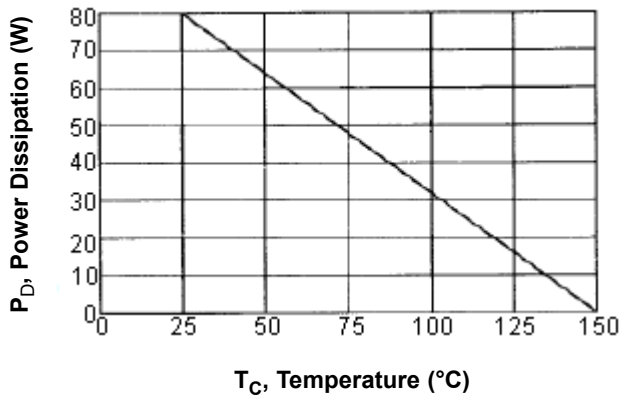
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	450	V
Collector-Emitter Voltage ($V_{BE} = -2.5\text{ V}$)	V_{CEX}	1,000	
Emitter-Base Voltage	V_{EBO}	7	
Collector Current - Continuous - Peak	I_C I_{CM}	15 30	A
Base Current	I_B	4	
Total Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	150 1	W W / $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +175	$^\circ\text{C}$



Thermal Characteristics

Characteristic	Symbol	Maximum	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1	$^{\circ}\text{C} / \text{W}$

Power Derating

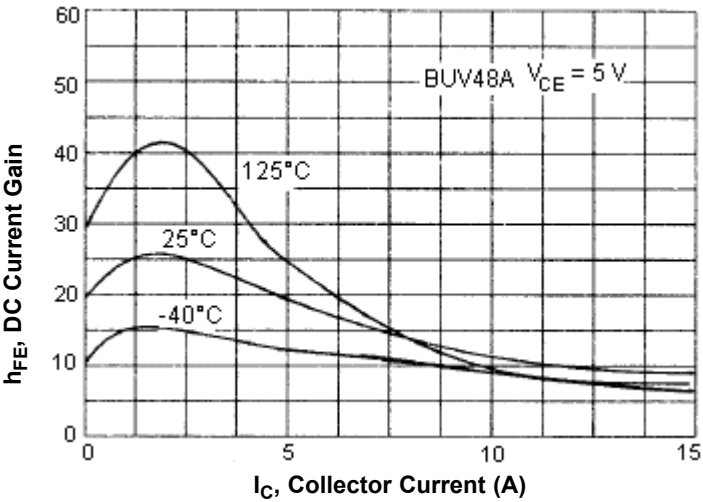


Electrical Characteristics ($T_C = 25^{\circ}\text{C}$ unless otherwise noted)

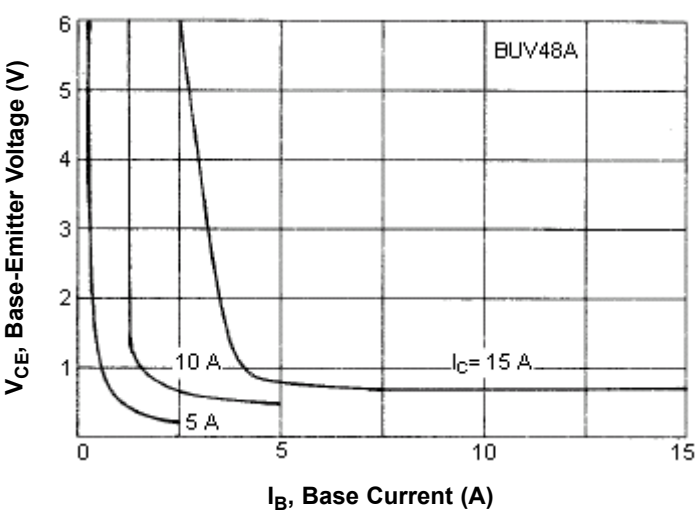
Parameter	Symbol	Minimum	Maximum	Unit	
Off Characteristics					
Collector-Emitter Sustaining Voltage (1) (I _C =200 mA, I _B = 0, L = 25 mH)	V _{CEO} (SUS)	450	-	V	
Collector Cut off Current (V _{CE} = V _{CEX} , V _{BE} = -2.5 V) (V _{CE} = V _{CEX} , V _{BE} = -2.5 V, T _C = 125°C)	I _{CEX}	-	0.2 2	mA	
Collector Cut off Current (V _{CE} = V _{CEX} , R _{BE} <10 Ω) (V _{CE} = V _{CEX} , R _{BE} <10 Ω, T _C = 125°C)	I _{CER}	-	0.5 4		
Emitter Cut off Current (V _{EB} = 5 V, I _C = 0)	I _{EBO}	-	1		
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 A)	V _{BE} (sat)	-	1.6		
Switching Characteristics					
Turn on Time	I _C = 8 A, I _{B1} = 1.6 A, I _{B2} = -1.6 A	t _{on}	-	1	μs
Storage Time		t _s	-	3	
Fall Time		t _f	-	0.8	

1) Pulse Test : Pulse width : 300 μs , duty cycle $\leq 2\%$

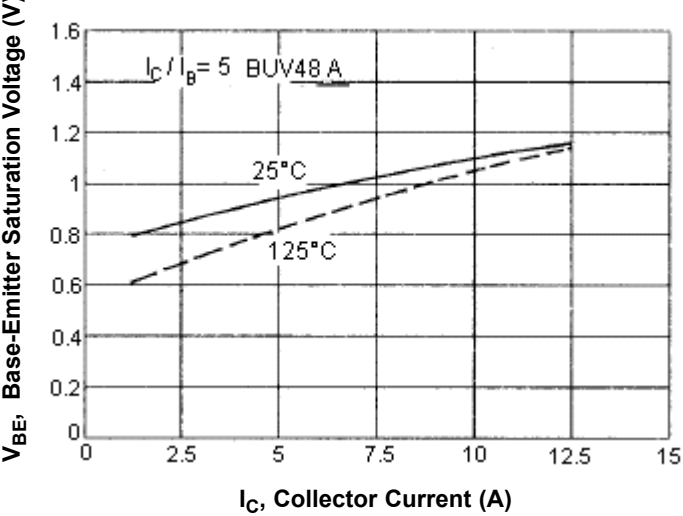
DC Current Gain



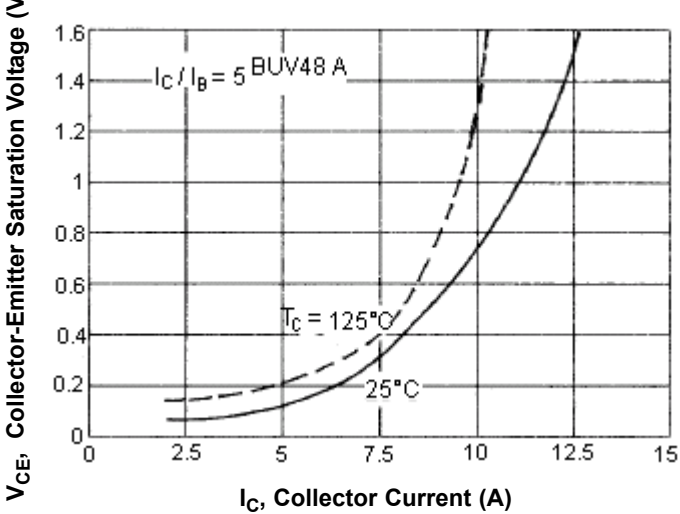
Collector Saturation Region



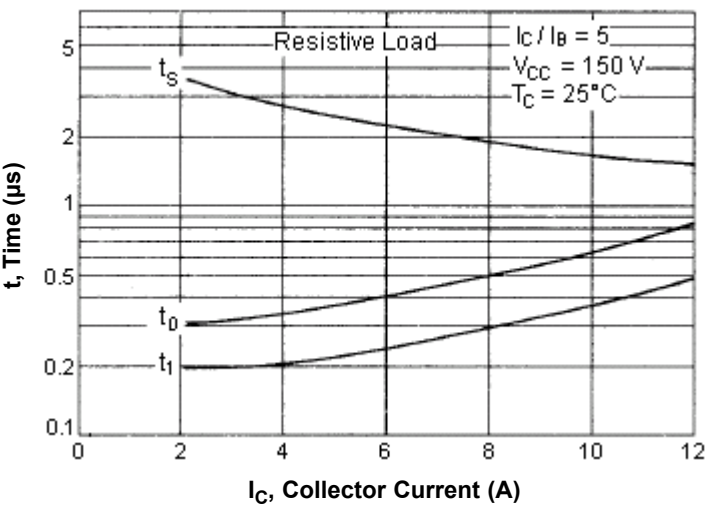
Base-Emitter Saturation Voltage



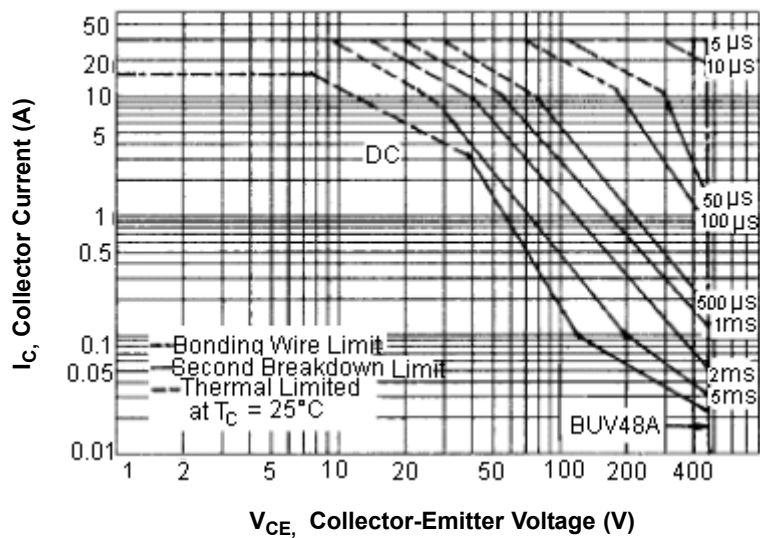
Collector-Emitter Saturation Voltage



Switching Time



Active Region Safe Operating Area



Specification Table

I_C (av) Maximum (A)	V_{CE0} 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)	Package	Type	Part Number
15	450	1,000	5	0.8	150	TO-247	NPN	BUV48A

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