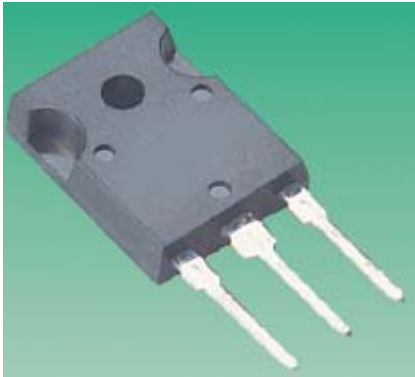


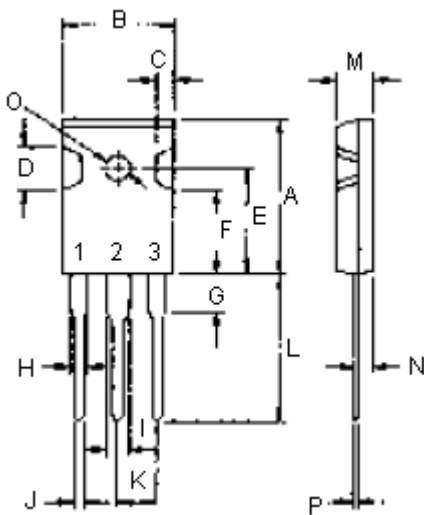
Power Transistor



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 $I_C = 8\text{ A}$



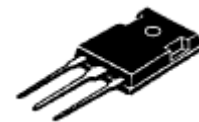
Pin 1. Base
2. Collector
3. Emitter

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

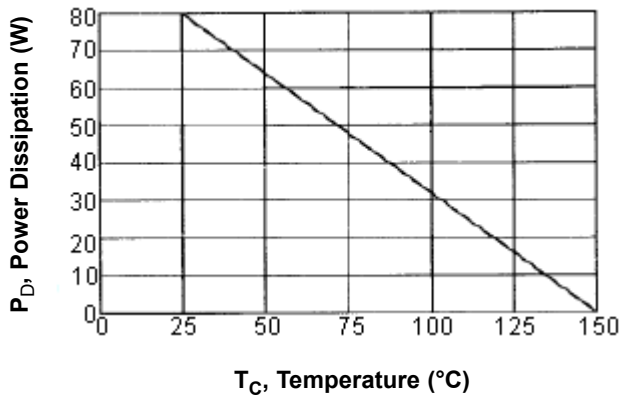
Maximum Ratings

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



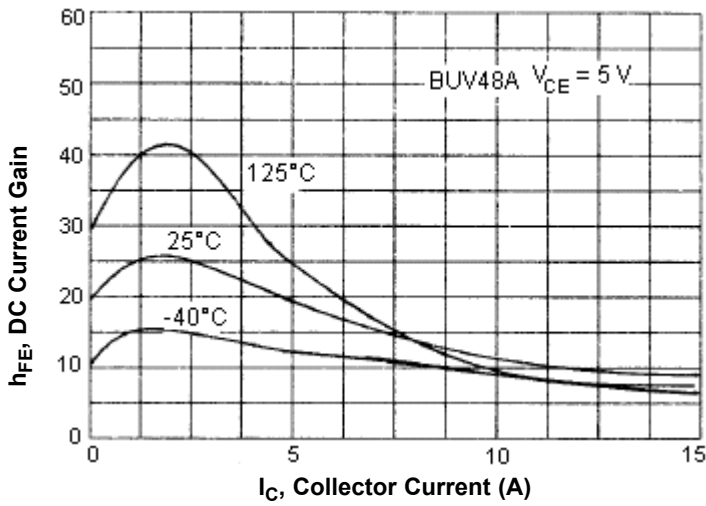
Electrical Characteristics ($T_C = 25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Minimum	Maximum	Unit	
Off Characteristics					
Collector-Emitter Sustaining Voltage (1) ($I_C = 200 \text{ mA}$, $I_B = 0$, $L = 25 \text{ mH}$)	$V_{CEO (SUS)}$	450	-	V	
Collector Cut off Current ($V_{CE} = V_{CEX}$, $V_{BE} = -2.5 \text{ V}$) ($V_{CE} = V_{CEX}$, $V_{BE} = -2.5 \text{ V}$, $T_C = 125^{\circ}\text{C}$)	I_{CEX}	-	0.2 2	mA	
Collector Cut off Current ($V_{CE} = V_{CEX}$, $R_{BE} < 10 \Omega$) ($V_{CE} = V_{CEX}$, $R_{BE} < 10 \Omega$, $T_C = 125^{\circ}\text{C}$)	I_{CER}	-	0.5 4		
Emitter Cut off Current ($V_{EB} = 5 \text{ V}$, $I_C = 0$)	I_{EBO}	-	1		
On Characteristics (1)					
Collector-Emitter Saturation Voltage ($I_C = 8 \text{ A}$, $I_B = 1.6 \text{ A}$) ($I_C = 12 \text{ A}$, $I_B = 2.4 \text{ A}$)	$V_{CE (sat)}$	-	1.5 5	V	
Base-Emitter Saturation Voltage ($I_C = 8 \text{ A}$, $I_B = 1.6 \text{ A}$)	$V_{BE (sat)}$	-	1.6		
Switching Characteristics					
Turn on Time	$I_C = 8 \text{ A}$, $I_{B1} = 1.6 \text{ A}$, $I_{B2} = -1.6 \text{ A}$	t_{on}	-	1	μs
Storage Time		t_s	-	3	
Fall Time		t_f	-	0.8	

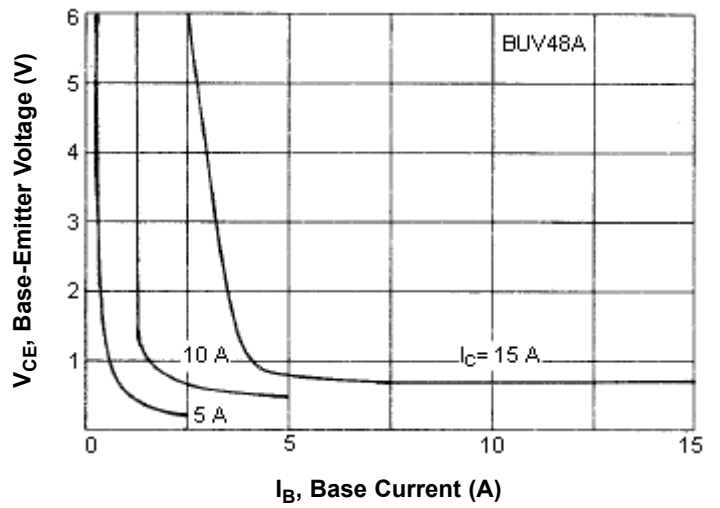
1) Pulse Test : Pulse width : 300 μs , duty cycle $\leq 2\%$

Power Transistor

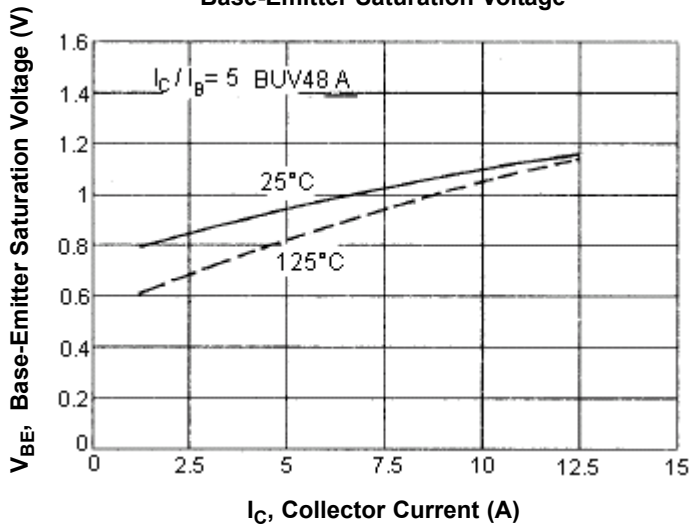
DC Current Gain



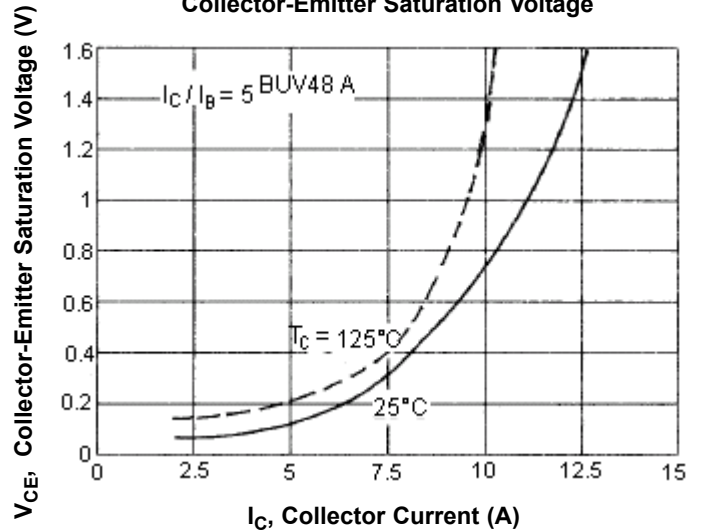
Collector Saturation Region



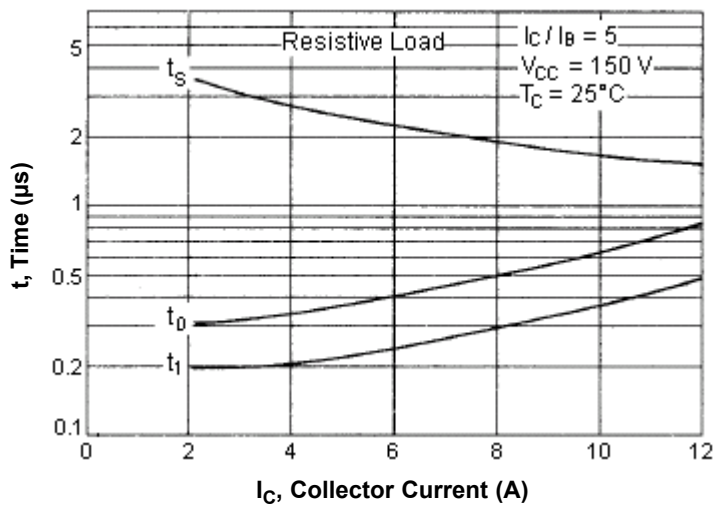
Base-Emitter Saturation Voltage



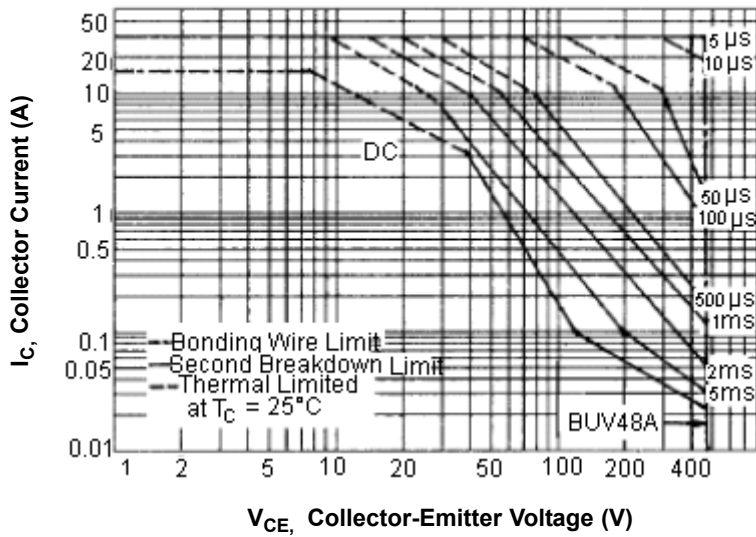
Collector-Emitter Saturation Voltage



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 (μ s)	P_{tot} at 25°C (W)	Package	Type	Part Number
15	450	1,000	5	0.8	150	TO-247	NPN	BUV48A

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2012.