

BUV26

Switchmode Series NPN Silicon Power Transistor

Designed for high-speed applications.

Features

- Switchmode Power Supplies
- High Frequency Converters
- Relay Drivers
- Driver
- These Devices are Pb-Free and are RoHS Compliant*

MAXIMUM RATINGS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO(\text{sus})}$	90	Vdc
Collector-Base Voltage	V_{CBO}	180	Vdc
Emitter-Base Voltage	V_{EBO}	7.0	Vdc
Collector Current – Continuous	I_C	20	Adc
Collector Current – Peak (pw 10 ms)	I_{CM}	30	Adc
Base Current – Continuous	I_B	4.0	Adc
Base Current – Peak	I_{BM}	6.0	Adc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$	P_D	85	W
Total Power Dissipation @ $T_C = 60^\circ\text{C}$	P_D	65	W
Operating and Storage Junction Temperature Range	T_J, T_{stg}	– 65 to +175	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.76	°C/W

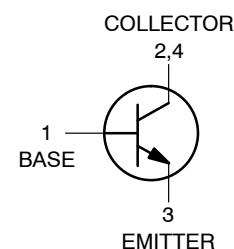


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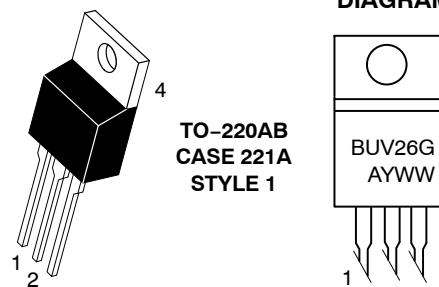
<http://onsemi.com>

**12 AMPERES
NPN SILICON
POWER TRANSISTORS
90 VOLTS, 85 WATTS**

SCHEMATIC



MARKING DIAGRAM



BUV26 = Device Code
A = Assembly Location
Y = Year
WW = Work Week
G = Pb-Free Package

ORDERING INFORMATION

Device	Package	Shipping
BUV26G	TO-220 (Pb-Free)	50 Units / Rail

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage ($I_C = 200 \text{ mA}$, $I_B = 0$, $L = 25 \text{ mH}$)	$V_{CEO(\text{sus})}$	90	–	Vdc
Collector Cutoff Current at Reverse Bias ($V_{CE} = 180 \text{ V}$, $V_{BE} = -1.5 \text{ V}$, $T_C = 125^\circ\text{C}$)	I_{CEX}	–	1.0	mAdc
Emitter Base Reverse Voltage ($I_E = 50 \text{ mA}$)	V_{EBO}	7.0	30	V
Emitter Cutoff Current ($V_{EB} = 5.0 \text{ V}$)	I_{EBO}	–	1.0	mAdc
Collector Cutoff Current ($V_{CE} = 180 \text{ V}$, $R_{BE} = 50 \Omega$, $T_C = 125^\circ\text{C}$)	I_{CER}	–	3.0	mAdc

ON CHARACTERISTICS

Collector-Emitter Saturation Voltage ($I_C = 6.0 \text{ A}$, $I_B = 0.4 \text{ A}$) ($I_C = 12 \text{ A}$, $I_B = 1.2 \text{ A}$)	$V_{CE(\text{sat})}$	–	0.6	Vdc
Base-Emitter Saturation Voltage ($I_C = 12 \text{ A}$, $I_B = 1.2 \text{ A}$)	$V_{BE(\text{sat})}$	–	2.0	Vdc

SWITCHING CHARACTERISTICS (Resistive Load)

Turn On Time	$I_C = 12 \text{ A}$, $I_B = 1.2 \text{ A}$ $V_{CC} = 50 \text{ V}$, $V_{BE} = 6.0 \text{ V}$ $R_B = 2.5 \Omega$	t_{on}	–	0.6	μs
Storage Time		t_s	–	1.0	
Fall Time		t_f	–	0.15	

SWITCHING CHARACTERISTICS (Inductive Load)

Storage Time	$V_{CC} = 50 \text{ V}$, $I_C = 12 \text{ A}$ $I_{B(\text{end})} = 1.2 \text{ A}$, $V_B = 5.0 \text{ V}$ $L_B = 0.5 \text{ pH}$, $T_J = 125^\circ\text{C}$	T_s	–	2.0	μs
Fall Time		T_f	–	.15	

1. Pulse Test: Pulse width $\leq 300 \mu\text{s}$; Duty cycle $\leq 2\%$.

TYPICAL CHARACTERISTICS

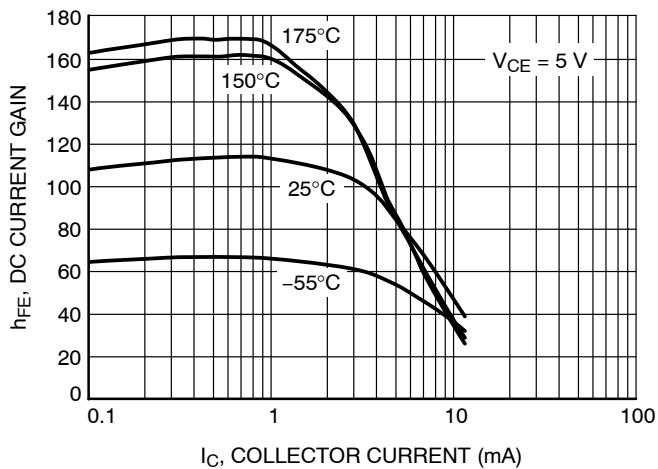


Figure 1. DC Current Gain

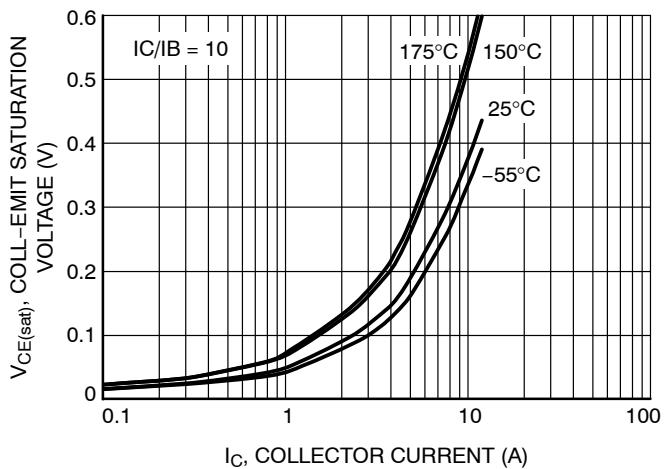


Figure 2. Collector-Emitter Saturation Voltage

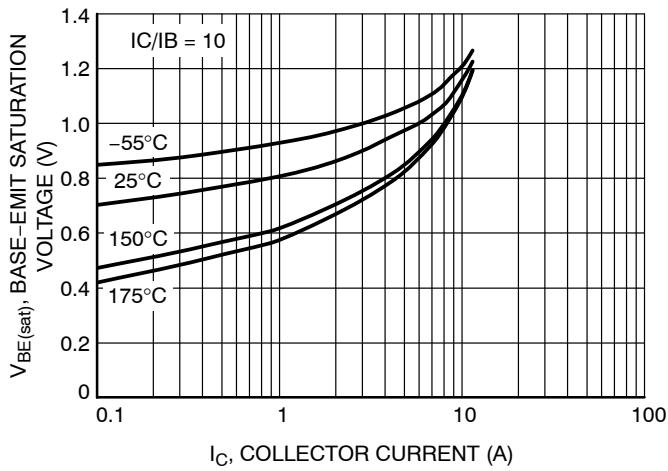


Figure 3. Base-Emitter Saturation Voltage

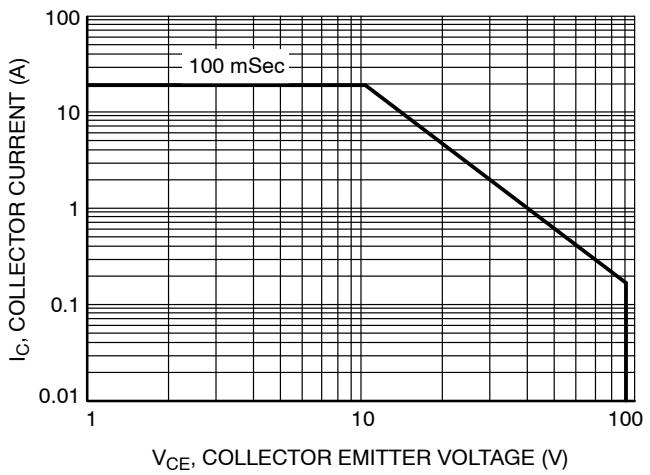
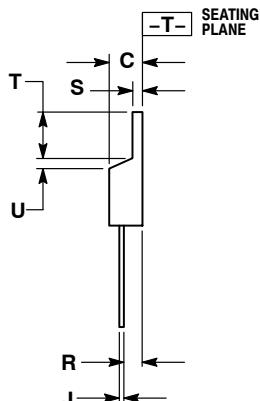
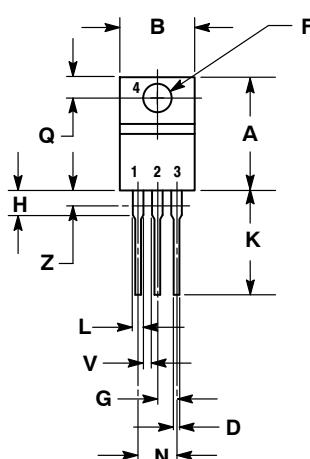


Figure 4. Safe Operating Area

PACKAGE DIMENSIONS

TO-220
CASE 221A-09
ISSUE AG

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.036	0.64	0.91
F	0.142	0.161	3.61	4.09
G	0.095	0.105	2.42	2.66
H	0.110	0.161	2.80	4.10
J	0.014	0.025	0.36	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

STYLE 1:

1. BASE
2. COLLECTOR
3. Emitter
4. COLLECTOR

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