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SPRINGFIELD, NEW JERSEY 07081
U.S.A.

BUV48
BUV48A

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MAXIMUM RATINGS

Rating	Symbol	BUV48	BUV48A	Unit
Collector-Emitter Voltage	$V_{CE0(usc)}$	400	450	Vdc
Collector-Emitter Voltage ($V_{BE} = -1.5$ V)	V_{CEX}	850	1000	Vdc
Emitter Base Voltage	V_{EB}	7		Vdc
Collector Current — Continuous	I_C	15		Adc
— Peak (1)	I_{CM}	30		
— Overload	I_{OI}	60		
Base Current — Continuous	I_B	5		Adc
— Peak (1)	I_{BM}	20		
Total Power Dissipation — $T_C = 25^\circ\text{C}$	P_D	150		Watts
— $T_C = 100^\circ\text{C}$		75		
Derate above 25°C		1		W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{sig}	-65 to +175		$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1	$^\circ\text{C/W}$
Maximum Lead Temperature for Soldering Purposes: 1/8" from Case for 5 Seconds	T_L	275	$^\circ\text{C}$

(1) Pulse Test: Pulse Width = 5 ms, Duty Cycle \leq 10%.

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS (1)					
Collector-Emitter Sustaining Voltage (Table 1) ($I_C = 200$ mA, $I_B = 0$) $L = 25$ mH	BUV48 BUV48A	$V_{CE0(usc)}$	400 450	— —	Vdc
Collector Cutoff Current ($V_{CEX} = \text{Rated Value}$, $V_{BE(off)} = 1.5$ Vdc) ($V_{CEX} = \text{Rated Value}$, $V_{BE(off)} = 1.5$ Vdc, $T_C = 125^\circ\text{C}$)		I_{CEX}	— —	0.2 2	mAdc
Collector Cutoff Current ($V_{CE} = \text{Rated } V_{CEX}$, $R_{BE} = 10 \Omega$)	$T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$	I_{CER}	— —	0.5 3	mAdc
Emitter Cutoff Current ($V_{EB} = 5$ Vdc, $I_C = 0$)		I_{EBO}	—	0.1	mAdc
Emitter-Base Breakdown Voltage ($I_E = 50$ mA - $I_C = 0$)		$V_{(BR)EBO}$	7	—	Vdc

SECOND BREAKDOWN

Second Breakdown Collector Current with Base Forward Biased	I_{Sb}	See Figure 12
Clamped Inductive SOA with Base Reverse Biased	RBSOA	See Figure 13

ON CHARACTERISTICS (1)

DC Current Gain ($I_C = 10$ Adc, $V_{CE} = 5$ Vdc) ($I_C = 8$ Adc, $V_{CE} = 5$ Vdc)	BUV48 BUV48A	h_{FE}	8 8	— —	— —
Collector-Emitter Saturation Voltage ($I_C = 10$ Adc, $I_B = 2$ Adc) ($I_C = 15$ Adc, $I_B = 3$ Adc) ($I_C = 10$ Adc, $I_B = 2$ Adc, $T_C = 100^\circ\text{C}$) ($I_C = 8$ Adc, $I_B = 1.6$ Adc) ($I_C = 12$ Adc, $I_B = 2.4$ Adc) ($I_C = 8$ Adc, $I_B = 1.6$ Adc, $T_C = 100^\circ\text{C}$)	BUV48 BUV48A	$V_{CE(sat)}$	— — — — — —	— — — — — —	1.5 5 2 1.5 5 2 Vdc
Base-Emitter Saturation Voltage ($I_C = 10$ Adc, $I_B = 2$ Adc) ($I_C = 10$ Adc, $I_B = 2$ Adc, $T_C = 100^\circ\text{C}$) ($I_C = 8$ Adc, $I_B = 1.6$ Adc) ($I_C = 8$ Adc, $I_B = 1.6$ Adc, $T_C = 100^\circ\text{C}$)	BUV48 BUV48A	$V_{BE(sat)}$	— — — —	— — — —	1.6 1.6 1.6 1.6 Vdc

DYNAMIC CHARACTERISTICS

Output Capacitance ($V_{CB} = 10$ Vdc, $I_E = 0$, $f_{test} = 1$ MHz)	C_{ob}	—	—	350	pF
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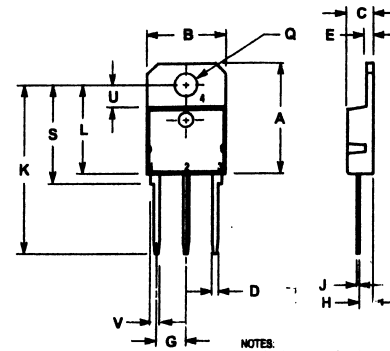
SWITCHING CHARACTERISTICS

Resistive Load (Table 1)							
Delay Time	$I_C = 10$ A, $I_B = 2$ A $I_C = 8$ A, $I_B = 1.6$ A Duty Cycle \leq 2%, $V_{BE(off)} = 5$ V $T_p = 30 \mu\text{s}$, $V_{CC} = 300$ V	BUV48 BUV48A	t_d	—	0.1	0.2	μs
Rise Time			t_r	—	0.4	0.7	
Storage Time			t_s	—	1.3	2	
Fall Time			t_f	—	0.2	0.4	

Inductive Load, Clamped (Table 1)

Storage Time	$I_C = 10$ A $I_{B1} = 2$ A	BUV48	$(T_C = 25^\circ\text{C})$	t_{sv}	—	1.3	—	μs
Fall Time				t_{fl}	—	0.06	—	
Storage Time	$I_C = 8$ A $I_{B1} = 1.6$ A	BUV48A	$(T_C = 100^\circ\text{C})$	t_{sv}	—	1.5	2.5	
Crossover Time				t_c	—	0.3	0.6	
Fall Time				t_{fl}	—	0.17	0.35	

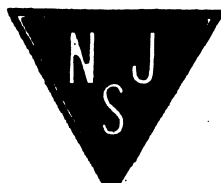
(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle \leq 2%.
 $V_d = 300$ V, $V_{BE(off)} = 5$ V, $L_c = 180 \mu\text{H}$



TO-218 TYPE

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	—	20.35	—	0.801
B	14.70	15.20	0.579	0.598
C	4.75	4.90	0.186	0.193
D	1.10	1.20	0.043	0.047
E	1.17	1.37	0.046	0.054
G	5.40	5.55	0.213	0.219
H	2.00	2.00	0.079	0.079
J	0.50	0.78	0.020	0.031
K	31.00 REF	—	1.220 REF	—
L	—	19.20	—	0.756
Q	4.00	4.10	0.158	0.161
S	17.80	18.20	0.701	0.717
U	4.00 REF	—	0.157 REF	—
V	1.75 REF	—	0.069	—



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