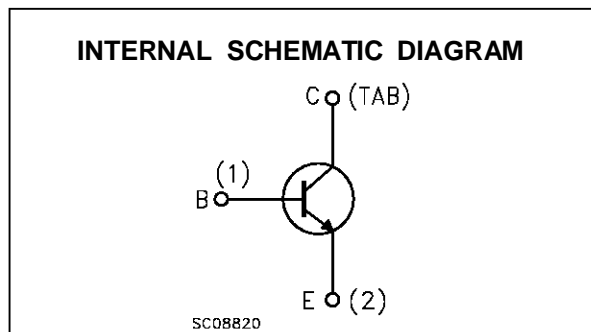
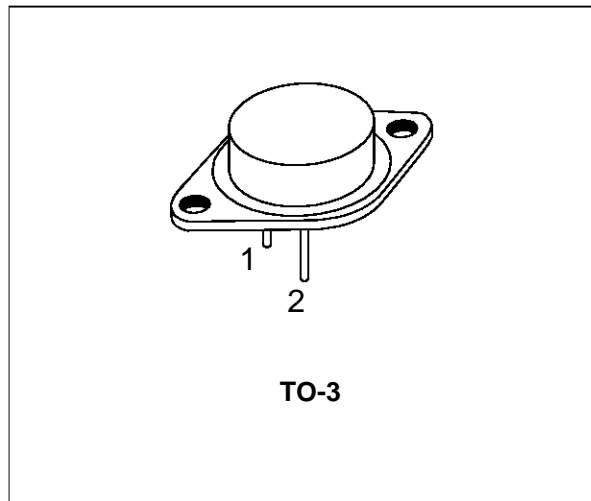


SILICON NPN SWITCHING TRANSISTOR

- SGS-THOMSON PREFERRED SALESTYPE
- FAST SWITCHING TIMES
- LOW SWITCHING LOSSES
- VERY LOW SATURATION VOLTAGE AND HIGH GAIN FOR REDUCED LOAD OPERATION



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEV}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	350	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	250	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	12	A
I_{CM}	Collector Peak Current	18	A
I_B	Base Current	2.5	A
I_{BM}	Base Peak Current	4	A
P_{Base}	Reverse Bias Base Dissipation (B.E. junction in avalanche)	1	A
P_{tot}	Total Dissipation at $T_{case} \leq 25^\circ C$	120	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ C$
T_j	Max Operating Junction Temperature	200	$^\circ C$

BUV42

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1.46	°C/W
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ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CER}	Collector Cut-off Current (R _{BE} = 10Ω)	V _{CE} = V _{CEV} V _{CE} = V _{CEV} T _C = 100°C			0.5 2.5	mA mA
I _{CEV}	Collector Cut-off Current	V _{CE} = V _{CEV} V _{BE} = -1.5V V _{CE} = V _{CEV} V _{BE} = -1.5V T _C =100°C			0.5 2	mA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage	I _C = 0.2A L = 25 mH	250			V
V _{EBO}	Emitter-base Voltage (I _C = 0)	I _E = 50 mA	7			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 2A I _B = 0.13A		0.25	0.8	V
		I _C = 4A I _B = 0.4A		0.4	0.9	V
		I _C = 6A I _B = 0.75A		0.5	1.2	V
		I _C = 2A I _B = 0.13A T _j = 100°C		0.25	0.9	V
		I _C = 4A I _B = 0.4A T _j = 100°C		0.45	1.2	V
		I _C = 6A I _B = 0.75A T _j = 100°C		0.6	1.5	V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 4A I _B = 0.4A		1	1.3	V
		I _C = 6A I _B = 0.75A		1.1	1.5	V
		I _C = 4A I _B = 0.4A T _j = 100°C		0.9	1.3	V
		I _C = 6A I _B = 0.75A T _j = 100°C		1.1	1.5	V
di _c /dt*	Rated of Rise of on-state Collector Current	V _{CC} = 200V R _C = 0 I _{B1} = 0.6A T _j = 25°C T _j = 100°C	25 20	40 35		A/μs A/μs
V _{CE(2μs)}	Collector Emitter Dynamic Voltage	V _{CC} = 200V R _C = 50Ω I _{B1} = 0.4A T _j = 25°C T _j = 100°C		1.7 2.5	2.5 4	V V
V _{CE(4μs)}	Collector Emitter Dynamic Voltage	V _{CC} = 200V R _C = 50Ω I _{B1} = 0.4A T _j = 25°C T _j = 100°C		0.9 1.1	1.7 2	V V

* Pulsed: Pulse duration = 300 μs, duty cycle = 2 %

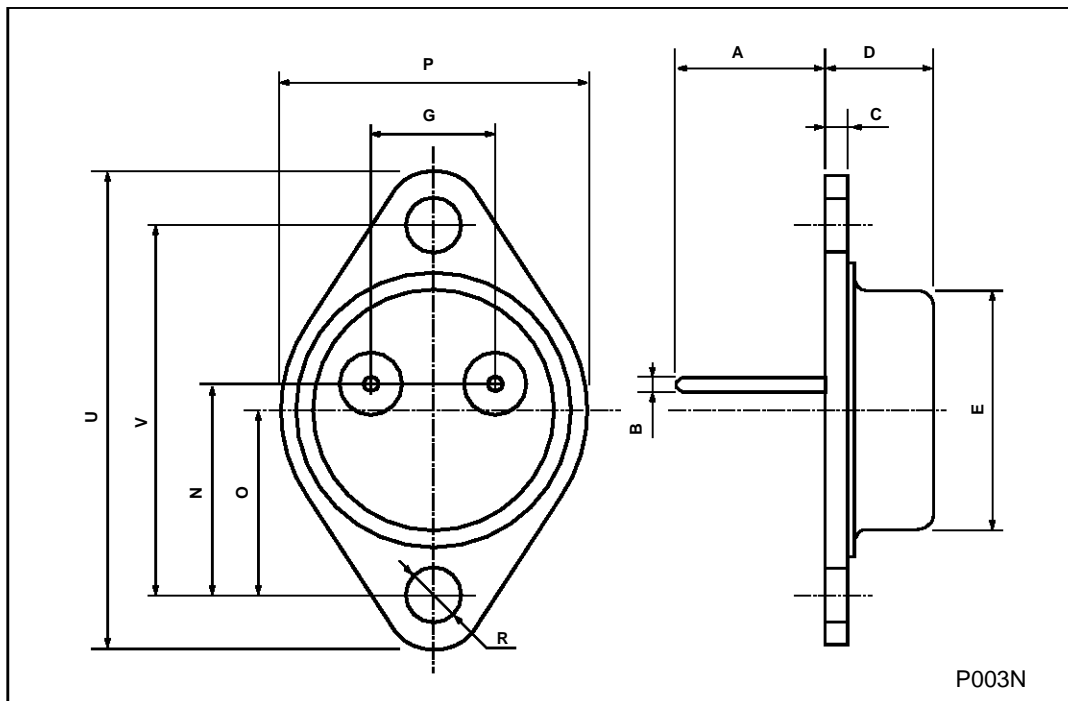
ELECTRICAL CHARACTERISTICS (continued)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
t_r	RESISTIVE LOAD Rise Time	$V_{CC} = 200V$	$I_C = 6A$		0.3	0.4	μs
t_s		$V_{BB} = -5V$	$I_{B1} = 0.75A$		1	1.6	μs
t_f		$R_{B2} = 3.3\Omega$	$T_p = 30\mu s$		0.15	0.3	μs
t_s	INDUCTIVE LOAD Storage Time	$V_{CC} = 200V$	$V_{clamp} = 250V$		1.2	1.8	μs
t_f		$I_{CC} = 4A$	$I_B = 0.4A$		0.08	0.2	μs
t_t		$V_{BB} = -5V$	$R_{B2} = 6.3\Omega$		0.03	0.12	μs
t_c		$L_C = 2.5mH$			0.15	0.35	μs
t_s	Storage Time	$V_{CC} = 200V$	$V_{clamp} = 250V$		1.8	2.4	μs
t_f		$I_{CC} = 4A$	$I_B = 0.4A$		0.2	0.4	μs
t_t		$V_{BB} = -5V$	$R_{B2} = 6.3\Omega$		0.08	0.2	μs
t_c		$L_C = 2.5mH$	$T_j = 100^\circ C$		0.4	0.7	μs
t_s	Storage Time	$V_{CC} = 200V$	$V_{clamp} = 250V$		2.5		μs
t_f		$I_{CC} = 4A$	$I_B = 0.5A$		0.4		μs
t_t		$V_{BB} = 0$	$R_{B2} = 7.5\Omega$		0.15		μs
		$L_C = 2.5mH$					
t_s	Storage Time	$V_{CC} = 200V$	$V_{clamp} = 250V$		4.8		μs
t_f		$I_{CC} = 4A$	$I_B = 0.4A$		0.7		μs
t_t		$V_{BB} = 0$	$R_{B2} = 7.5\Omega$		0.4		μs
		$L_C = 2.5mH$	$T_j = 100^\circ C$				

* Pulsed: Pulse duration = 300 μs , duty cycle = 2 %

TO-3 (H) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		11.7			0.460	
B	0.96		1.10	0.037		0.043
C			1.70			0.066
D			8.7			0.342
E			20.0			0.787
G		10.9			0.429	
N		16.9			0.665	
P			26.2			1.031
R	3.88		4.09	0.152		0.161
U			39.50			1.555
V		30.10			1.185	



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