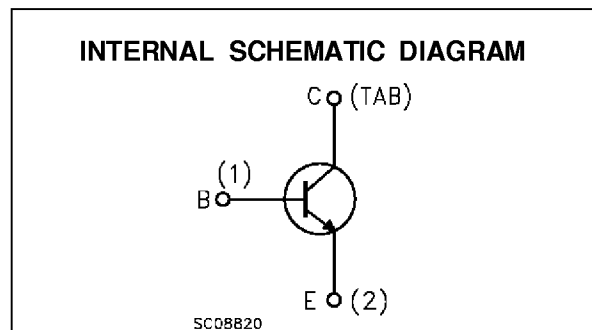
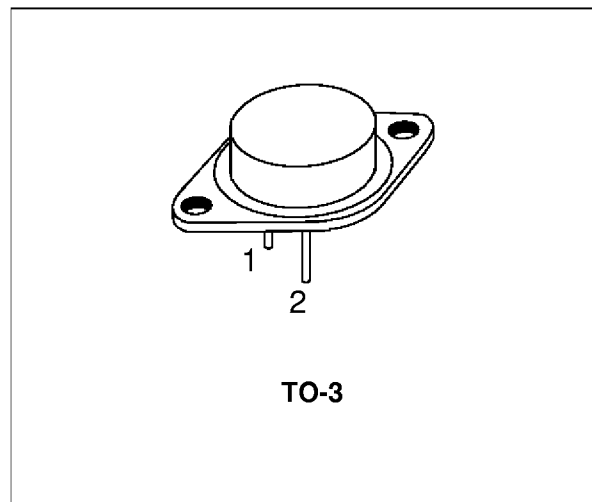


SILICON NPN SWITCHING TRANSISTOR

- 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 ($V_{BE} = -1.5V$)	250	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	125	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	50	V
I_{CM}	Collector Peak Current	80	V
I_B	Base Current	10	A
I_{BM}	Base Peak Current	18	A
P_{Base}	Reverse Bias Base Dissipation (B.E. junction in avalanche)	3	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$	250	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ\text{C}$
T_J	Max Operating Junction Temperature	200	$^\circ\text{C}$

BUV60

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	0.7	$^{\circ}C/W$
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector Cut-off Current ($R_{BE} = 10\Omega$)	$V_{CE} = V_{CEV}$ $V_{CE} = V_{CEV} \quad T_c = 100^{\circ}C$			1 5	mA mA
I_{CEV}	Collector Cut-off Current	$V_{CE} = V_{CEV} \quad V_{BE} = -1.5V$ $V_{CE} = V_{CEV} \quad V_{BE} = -1.5V \quad T_c = 100^{\circ}C$			1 4	mA mA
I_{EBO}	Emitter Cut-off Current ($I_c = 0$)	$V_{EB} = 5V$			1	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_c = 0.2A$ $L = 25mH$	125			V
V_{EBO}	Emitter-base Voltage ($I_c = 0$)	$I_E = 50mA$	7			V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_c = 25A \quad I_B = 1.25A$ $I_c = 50A \quad I_B = 5A$ $I_c = 60A \quad I_B = 7.5A$ $I_c = 25A \quad I_B = 1.25A \quad T_j = 100^{\circ}C$ $I_c = 50A \quad I_B = 5A \quad T_j = 100^{\circ}C$ $I_c = 60A \quad I_B = 7.5A \quad T_j = 100^{\circ}C$		0.45 0.65 0.75 0.45 0.7 0.9	0.9 0.9 1.2 1.2 1.5 1.8	V V V V V V
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_c = 50A \quad I_B = 5A$ $I_c = 60A \quad I_B = 7.5A$ $I_c = 50A \quad I_B = 5A \quad T_j = 100^{\circ}C$ $I_c = 60A \quad I_B = 7.5A \quad T_j = 100^{\circ}C$		1.4 1.55 1.45 1.65	1.6 1.8 1.7 1.9	V V V V
di_c/d_t^*	Rated of Rise of on-state Collector Current	$V_{CC} = 100V \quad R_C = 0 \quad I_{B1} = 7.5A$ $T_j = 25^{\circ}C$ $T_j = 100^{\circ}C$	100 90	160 150		A/ μs A/ μs
$V_{CE(2\mu s)}$	Collector Emitter Dynamic Voltage	$V_{CC} = 100V$ $R_C = 2\Omega$ $I_{B1} = 5A$ $T_j = 25^{\circ}C$ $T_j = 100^{\circ}C$		2.5 3	3 4.5	V V
$V_{CE(4\mu s)}$	Collector Emitter Dynamic Voltage	$V_{CC} = 100V$ $R_C = 2\Omega$ $I_{B1} = 5A$ $T_j = 25^{\circ}C$ $T_j = 100^{\circ}C$		1.8 1.9	2.2 3	V V

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

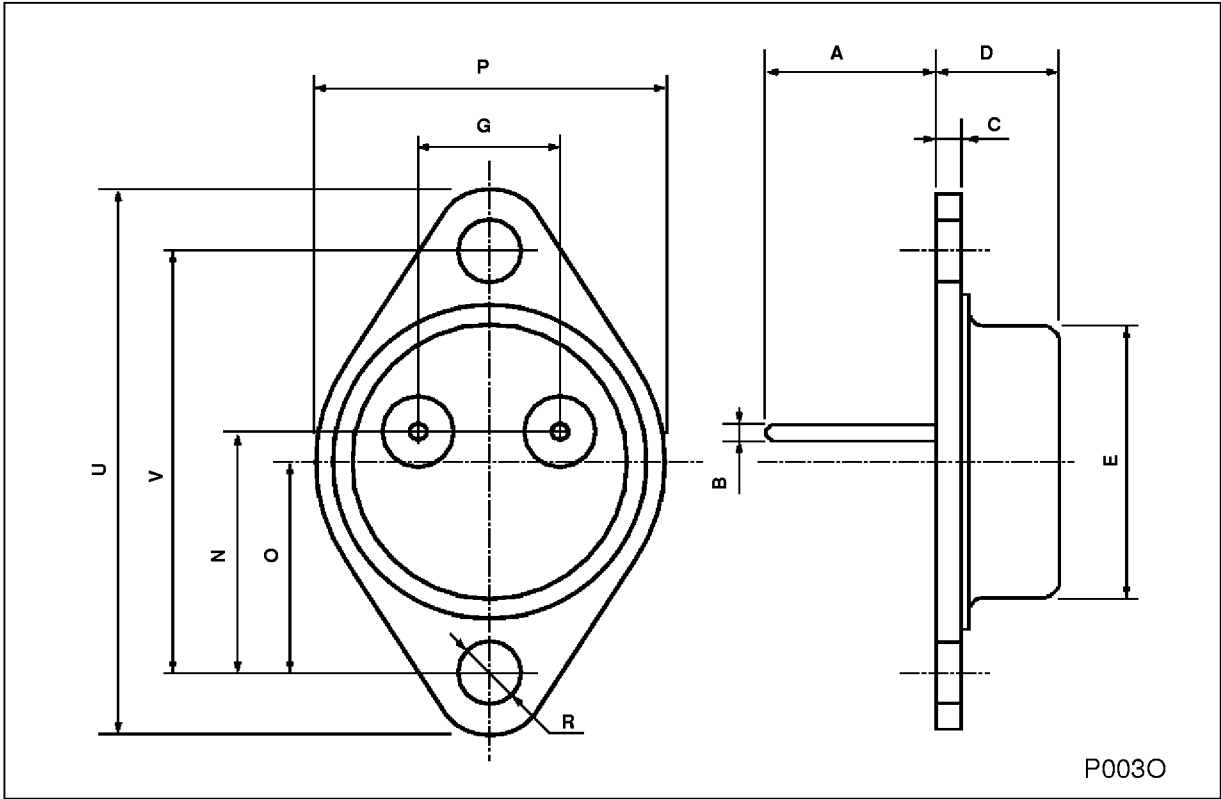
ELECTRICAL CHARACTERISTICS (continued)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_r	RESISTIVE LOAD			0.5	0.8	μs
t_s	Rise Time	$V_{CC} = 100\text{V}$ $I_C = 60\text{A}$		0.6	1.1	μs
t_f	Storage Time	$V_{BB} = -5\text{V}$ $I_{B1} = 7.5\text{A}$		0.06	0.2	μs
	Fall Time	$R_{B2} = 0.33\Omega$ $T_p = 30\mu\text{s}$				
t_s	INDUCTIVE LOAD			0.5	1.2	μs
	Storage Time	$V_{CC} = 100\text{V}$ $V_{\text{clamp}} = 125\text{V}$		0.05	0.15	μs
t_f	Fall Time	$I_C = 50\text{A}$ $I_B = 5\text{A}$		0.01	0.05	μs
t_t	Tail Time in Turn-on	$V_{BB} = -5\text{V}$ $R_{B2} = 0.5\Omega$		0.1	0.3	μs
t_c	Crossover Time	$L_C = 0.1\text{mH}$				
t_s	Storage Time	$V_{CC} = 100\text{V}$ $V_{\text{clamp}} = 125\text{V}$		0.85	1.5	μs
t_f	Fall Time	$I_C = 50\text{A}$ $I_B = 5\text{A}$		0.12	0.25	μs
t_t	Tail Time in Turn-on	$V_{BB} = -5\text{V}$ $R_{B2} = 0.5\Omega$		0.04	0.1	μs
t_c	Crossover Time	$L_C = 0.1\text{mH}$ $T_j = 100^\circ\text{C}$		0.2	0.5	μs
t_s	Storage Time	$V_{CC} = 100\text{V}$ $V_{\text{clamp}} = 125\text{V}$		1.5		μs
t_f	Fall Time	$I_C = 50\text{A}$ $I_B = 5\text{A}$		1.3		μs
t_t	Tail Time in Turn-on	$V_{BB} = 0$ $R_{B2} = 1.5\Omega$		0.4		μs
		$L_C = 0.1\text{mH}$				
t_s	Storage Time	$V_{CC} = 100\text{V}$ $V_{\text{clamp}} = 125\text{V}$		2.7		μs
t_f	Fall Time	$I_C = 50\text{A}$ $I_B = 5\text{A}$		1.8		μs
t_t	Tail Time in Turn-on	$V_{BB} = 0$ $R_{B2} = 1.5\Omega$		0.6		μs
		$L_C = 0.1\text{mH}$ $T_j = 100^\circ\text{C}$				

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

TO-3 (S) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	1.47		1.60	0.058		0.063
C	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
P	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193



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