

HIGH POWER NPN SILICON TRANSISTOR

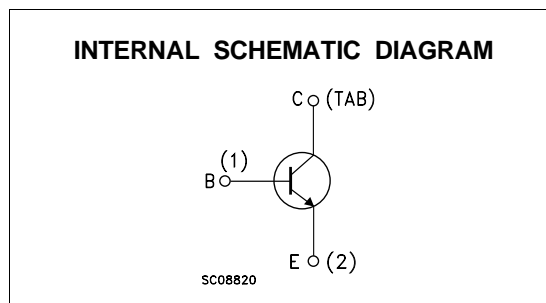
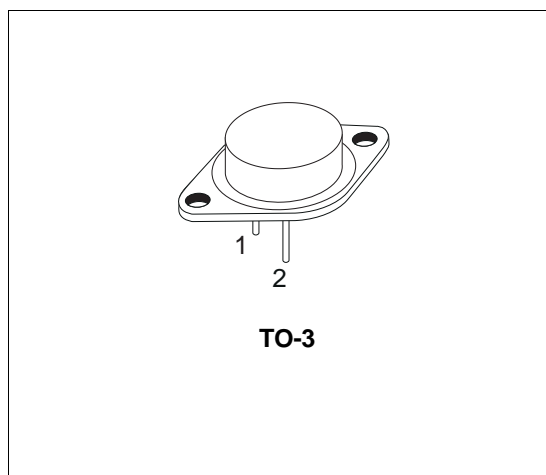
- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

- SWITCH MODE POWER SUPPLIES
- FLYBACK AND FORWARD SINGLE TRANSISTOR LOW POWER CONVERTERS

DESCRIPTION

The 2N6547 is a silicon Multiepitaxial Mesa NPN transistor mounted in TO-3 metal case. It is particularly intended for switching and industrial applications from single and three-phase mains.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CER}	Collector-Emitter Voltage ($R_{BE} = 50 \Omega$)	850	V
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)	850	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	400	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	9	V
I_C	Collector Current	15	A
I_{CM}	Collector Peak Current	30	A
I_B	Base Current	4	A
I_{BM}	Base Peak Current	20	A
P_{tot}	Total Dissipation at $T_c = 25^\circ C$	175	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ C$
T_j	Max. Operating Junction Temperature	200	$^\circ C$

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case Max	1	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = 850\text{ V}$			1	mA
		$V_{CE} = 850\text{ V}$ $T_c = 100\text{ °C}$			4	mA
I_{CER}	Collector Cut-off Current ($R_{BE} = 10\ \Omega$)	$V_{CE} = 850\text{ V}$ $T_c = 100\text{ °C}$			5	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 9\text{ V}$			1	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 100\text{ mA}$ $L = 25\text{ mH}$	400			V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{ A}$ $I_B = 2\text{ A}$			1.5	V
		$I_C = 15\text{ A}$ $I_B = 3\text{ A}$			5	V
		$I_C = 10\text{ A}$ $I_B = 2\text{ A}$ $T_c = 100\text{ °C}$			2.5	V
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 10\text{ A}$ $I_B = 2\text{ A}$			1.6	V
		$I_C = 10\text{ A}$ $I_B = 2\text{ A}$ $T_c = 100\text{ °C}$			1.6	V
h_{FE*}	DC Current Gain	$I_C = 5\text{ A}$ $V_{CE} = 2\text{ V}$	12		30	
		$I_C = 10\text{ A}$ $V_{CE} = 2\text{ V}$	6			
f_T*	Transition Frequency	$I_C = 0.5\text{ A}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ MHz}$	6		24	MHz
C_{CBO}	Collector-Base Capacitance ($I_E = 0$)	$V_{CB} = 10\text{ V}$ $f = 1\text{ MHz}$			360	pF

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

RESISTIVE LOAD SWITCHING TIMES

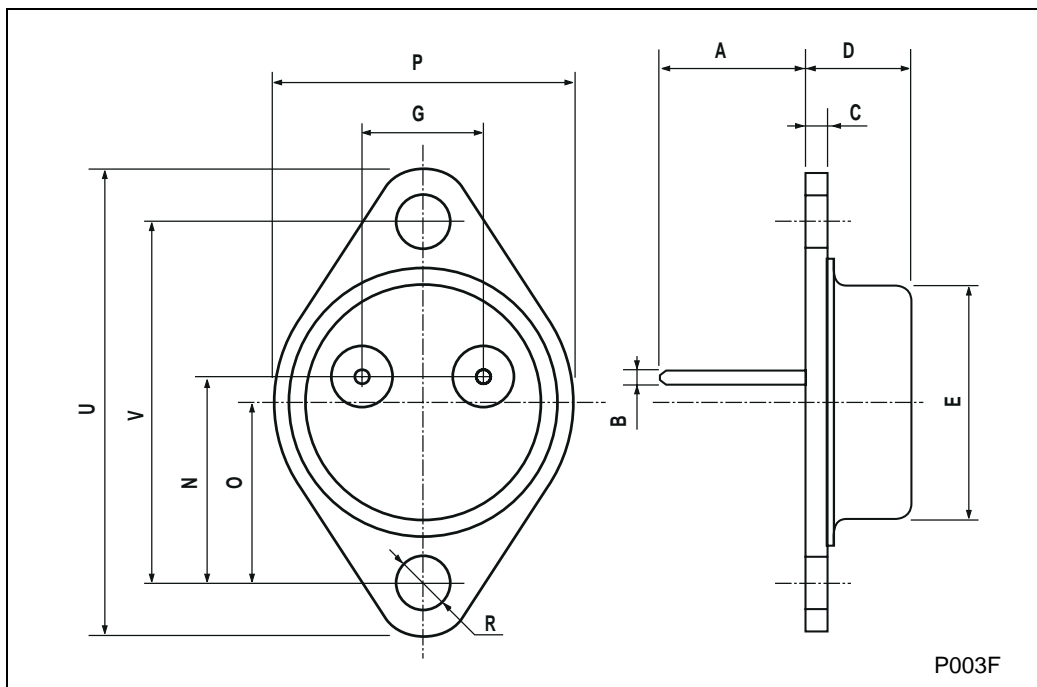
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_{on}	Turn-on Time	$V_{CC} = 250\text{ V}$ $I_C = 10\text{ A}$			1	μs
t_s	Storage Time	$I_{B1} = -I_{B2} = 2\text{ A}$ $T_p \geq 25\ \mu\text{s}$			4	μs
t_f	Fall Time				0.7	μs

INDUCTIVE LOAD SWITCHING TIMES

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_s	Storage Time	$V_{CL} = 450\text{ V}$ $I_C = 10\text{ A}$			5	μs
t_f	Fall Time	$L_C = 180\ \mu\text{H}$ $I_{B1} = 2\text{ A}$			1.5	μs
		$V_{BE} = -5\text{ V}$ $T_c = 100\text{ °C}$				

TO-3 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
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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