

HIGH POWER NPN SILICON TRANSISTOR

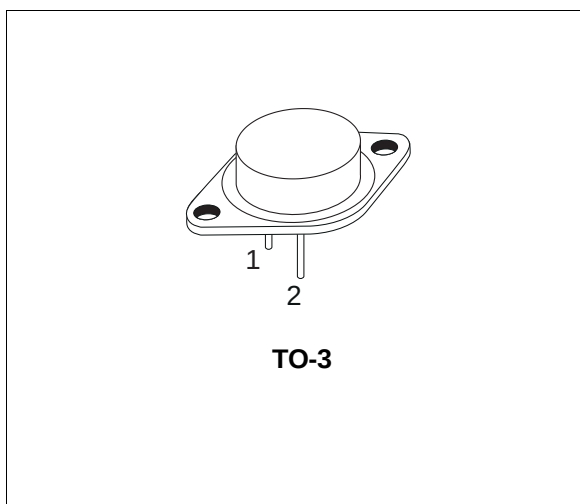
- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

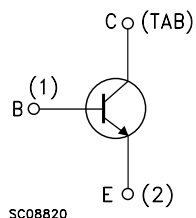
- SWITCH MODE POWER SUPPLIES
- FLYBACK AND FORWARD SINGLE TRANSISTOR LOW POWER CONVERTERS

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.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CE}	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 $T_c = 25^\circ\text{C}$	175	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	200	$^\circ\text{C}$

THERMAL DATA

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = 850 V V _{CE} = 850 V T _c = 100 °C			1 4	mA mA
I _{CER}	Collector Cut-off Current (R _{BE} = 10 Ω)	V _{CE} = 850 V T _c = 100 °C			5	mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 9 V			1	mA
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA L = 25 mH	400			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 10 A I _B = 2 A I _C = 15 A I _B = 3 A I _C = 10 A I _B = 2 A T _c = 100 °C			1.5 5 2.5	V V V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	I _C = 10 A I _B = 2 A I _C = 10 A I _B = 2 A T _c = 100 °C			1.6 1.6	V V
h _{FE} *	DC Current Gain	I _C = 5 A V _{CE} = 2 V I _C = 10 A V _{CE} = 2 V	12 6		30	
f _T *	Transition Frequency	I _C = 0.5 A V _{CE} = 10 V f = 1 MHz	6		24	MHz
C _{CB0}	Collector-Base Capacitance (I _E = 0)	V _{CB} = 10 V f = 1 MHz			360	pF

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

RESISTIVE LOAD SWITCHING TIMES

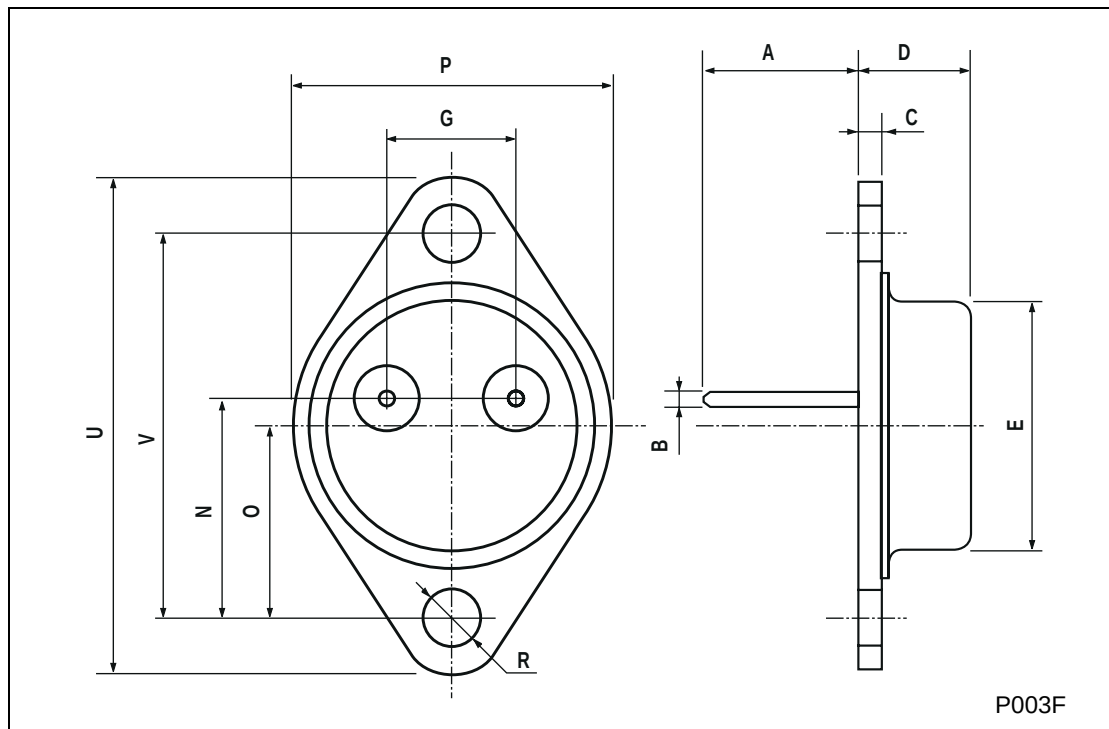
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _{on}	Turn-on Time	V _{CC} = 250 V I _C = 10 A			1	μs
t _s	Storage Time	I _{B1} = - I _{B2} = 2 A T _p ≥ 25 μs			4	μs
t _f	Fall Time				0.7	μs

INDUCTIVE LOAD SWITCHING TIMES

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _s	Storage Time	V _{CL} = 450 V I _C = 10 A			5	μs
t _f	Fall Time	L _C = 180 μH I _{B1} = 2 A V _{BE} = -5 V T _c = 100 °C			1.5	μs

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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