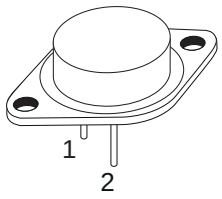
2N6547

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

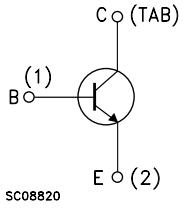


TO-3

DESCRIPTION

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

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CER}	Collector-Emitter Voltage (R_{BE} = 50 Ω)	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 °C	175	W
T_{stg}	Storage Temperature	-65 to200	°C
T_j	Max. Operating Junction Temperature	200	°C

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case Max	1	°C/W

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 = 10A 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 = 10A 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_{CBO}	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} t_s t_f	Turn-on Time Storage Time Fall Time	V_{CC} = 250 V I_C = 10 A I_{B1} = - I_{B2} = 2 A $T_p \geq$ 25 µs			1 4 0.7	µs µs µs

INDUCTIVE LOAD SWITCHING TIMES

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