

2N6544
2N6545

NPN SILICON
POWER TRANSISTOR



TO-3 CASE



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N6544, 2N6545 types are Silicon NPN Triple Diffused Mesa Transistors designed for high voltage, high current, high speed switching applications.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: ($T_C=25^\circ\text{C}$)

Collector-Emitter Voltage
Collector-Emitter Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Peak Collector Current
Continuous Emitter Current
Peak Emitter Current
Continuous Base Current
Peak Base Current
Power Dissipation
Power Dissipation, $T_C=100^\circ\text{C}$
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL	2N6544	2N6545	UNITS
V_{CEV}	650	850	V
V_{CEX}	350	450	V
V_{CEO}	300	400	V
V_{EBO}		9.0	V
I_C		8.0	A
I_{CM}		16	A
I_E		16	A
I_{EM}		32	A
I_B		8.0	A
I_{BM}		16	A
P_D		125	W
P_D		71.5	W
T_J, T_{stg}		-65 to +200	$^\circ\text{C}$
θ_{JC}		1.4	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS: ($T_C=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N6544		2N6545		UNITS
		MIN	MAX	MIN	MAX	
I_{CEV}	$V_{CE}=\text{Rated } V_{CEV}, V_{BE}=1.5\text{V}$	-	0.5	-	0.5	mA
I_{CEV}	$V_{CE}=\text{Rated } V_{CEV}, V_{BE}=1.5\text{V}, T_C=100^\circ\text{C}$	-	2.5	-	2.5	mA
I_{CER}	$V_{CE}=\text{Rated } V_{CEV}, R_{BE}=50\Omega, T_C=100^\circ\text{C}$	-	3.0	-	3.0	mA
I_{EBO}	$V_{EB}=9.0\text{V}$	-	1.0	-	1.0	mA
BV_{CEX}	$V_{CL}=\text{Rated } V_{CEX}, I_C=4.5\text{A}, T_C=100^\circ\text{C}$	350	-	450	-	V
BV_{CEX}	$V_{CL}=\text{Rated } V_{CEO}-100\text{V}, I_C=8.0\text{A}, T_C=100^\circ\text{C}$	200	-	300	-	V
BV_{CEO}	$I_C=100\text{mA}$	300	-	400	-	V
$V_{CE(SAT)}$	$I_C=5.0\text{A}, I_B=1.0\text{A}$	-	1.5	-	1.5	V
$V_{CE(SAT)}$	$I_C=8.0\text{A}, I_B=2.0\text{A}$	-	5.0	-	5.0	V
$V_{CE(SAT)}$	$I_C=5.0\text{A}, I_B=1.0\text{A}, T_C=100^\circ\text{C}$	-	2.5	-	2.5	V
$V_{BE(SAT)}$	$I_C=5.0\text{A}, I_B=1.0\text{A}$	-	1.6	-	1.6	V
$V_{BE(SAT)}$	$I_C=5.0\text{A}, I_B=1.0\text{A}, T_C=100^\circ\text{C}$	-	1.6	-	1.6	V
h_{FE}	$V_{CE}=3.0\text{V}, I_C=2.5\text{A}$	12	60	12	60	
h_{FE}	$V_{CE}=3.0\text{V}, I_C=5.0\text{A}$	7.0	35	7.0	35	

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ELECTRICAL CHARACTERISTICS - Continued: ($T_C=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
f_t	$V_{CE}=10\text{V}$, $I_C=300\text{mA}$, $f=1.0\text{MHz}$	6.0		28	MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$	75		300	pF
$I_{S/b}$	$V_{CE}=100\text{V}$, $t=1.0\text{s}$	0.2			A

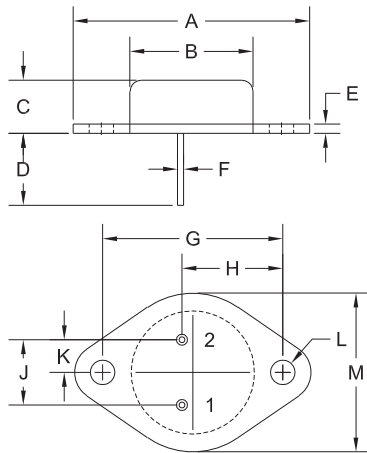
Resistive Load

t_d	$V_{CC}=250\text{V}$, $I_C=5.0\text{A}$, $I_{B1}=I_{B2}=1.0\text{A}$, $t_p=100\mu\text{s}$, Duty Cycles $\leq 2.0\%$			0.05	μs
t_r				1.0	μs
t_s				4.0	μs
t_f				1.0	μs

Inductive Load (Clamped)

t_s	$V_{CL}=\text{Rated } V_{CEX}$, $I_C=5.0\text{A}$, $I_{B1}=1.0\text{A}$, $V_{BE}=5.0\text{V}$, $T_C=100^\circ\text{C}$			4.0	μs
t_f				0.9	μs
t_s	$V_{CL}=\text{Rated } V_{CEX}$, $I_C=5.0\text{A}$, $I_{B1}=1.0\text{A}$, $V_{BE}=5.0\text{V}$, $T_C=25^\circ\text{C}$		1.2		μs
t_f			0.18		μs

TO-3 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.516	1.573	38.50	39.96
B (DIA)	0.748	0.875	19.00	22.23
C	0.250	0.450	6.35	11.43
D	0.433	0.516	11.00	13.10
E	0.054	0.065	1.38	1.65
F	0.035	0.045	0.90	1.15
G	1.177	1.197	29.90	30.40
H	0.650	0.681	16.50	17.30
J	0.420	0.440	10.67	11.18
K	0.205	0.225	5.21	5.72
L (DIA)	0.151	0.172	3.84	4.36
M	0.984	1.050	25.00	26.67

TO-3 (REV: R2)

R2 **LEAD CODE:**
1) Base
2) Emitter
Case) Collector

MARKING:
FULL PART NUMBER

R1 (7-February 2011)

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Central's operations team provides the highest level of support to insure product is delivered on-time.

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- Customer specific screening
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- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centalsemi.com

Worldwide Field Representatives:
www.centalsemi.com/wwreps

Worldwide Distributors:
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