

2N6544  
2N6545

NPN SILICON  
POWER TRANSISTOR



TO-3 CASE



www.centalsemi.com

**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	$^\circ\text{C}$
$\theta_{JC}$		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

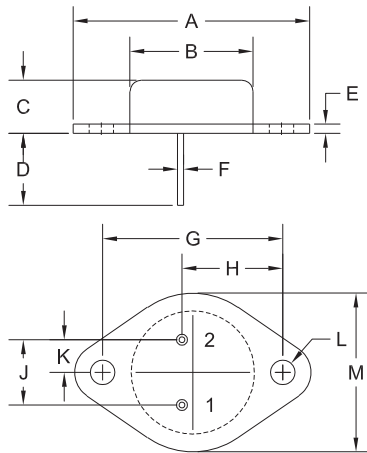
Resistive Load

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

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

**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)