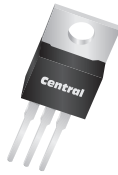


D44E1  
D44E2  
D44E3  
  
SILICON  
NPN DARLINGTON  
POWER TRANSISTORS



www.centrasemi.com



TO-220 CASE

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR D44E series devices are silicon NPN Darlington power transistors, manufactured by the epitaxial base process, with 2 integrated resistors and 1 diode for stability and protection. These devices are designed for switching and output applications where high gain is desired.

**MARKING: FULL PART NUMBER**

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

Collector-Emitter Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Continuous Base Current  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

SYMBOL	D44E1	D44E2	D44E3	UNITS
$V_{CEO}$	40	60	80	V
$V_{CES}$	40	60	80	V
$V_{EBO}$		7.0		V
$I_C$		10		A
$I_B$		1.0		A
$P_D$		80		W
$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$
$\theta_{JC}$		1.56		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CES}$	$V_{CE}=\text{Rated } V_{CES}$			500	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=7.0\text{V}$			5.0	mA
$BV_{CEO}$	$I_C=100\text{mA}$ (D44E1)	40			V
$BV_{CEO}$	$I_C=100\text{mA}$ (D44E2)	60			V
$BV_{CEO}$	$I_C=100\text{mA}$ (D44E3)	80			V
$V_{CE(SAT)}$	$I_C=5.0\text{A}, I_B=10\text{mA}$			1.5	V
$V_{CE(SAT)}$	$I_C=10\text{A}, I_B=20\text{mA}$			3.0	V
$V_{BE(SAT)}$	$I_C=5.0\text{A}, I_B=10\text{mA}$			2.5	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=5.0\text{A}$	1000			
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$			200	pF
$t_{on}$	$I_C=10\text{A}, I_{B1}=20\text{mA}$		1.0		$\mu\text{s}$
$t_{off}$	$I_C=10\text{A}, I_{B1}=I_{B2}=20\text{mA}$		2.5		$\mu\text{s}$

D44E1  
D44E2  
D44E3  
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TO-220 CASE - MECHANICAL OUTLINE



R2

LEAD CODE:

- 1) Base
- 2) Collector
- 3) Emitter
- Tab) Collector

MARKING:  
FULL PART NUMBER

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.170	0.190	4.31	4.82
B	0.045	0.055	1.15	1.39
C	0.013	0.026	0.33	0.65
D	0.083	0.107	2.10	2.72
E	0.394	0.417	10.01	10.60
F (DIA)	0.140	0.157	3.55	4.00
G	0.100	0.118	2.54	3.00
H	0.230	0.270	5.85	6.85
I	0.560	0.625	14.23	15.87
J	-	0.250	-	6.35
K	0.025	0.038	0.64	0.96
L	0.500	0.579	12.70	14.70
M	0.090	0.110	2.29	2.79

TO-220 (REV: R2)

R1 (4-March 2014)