

isc Silicon NPN Power Transistors

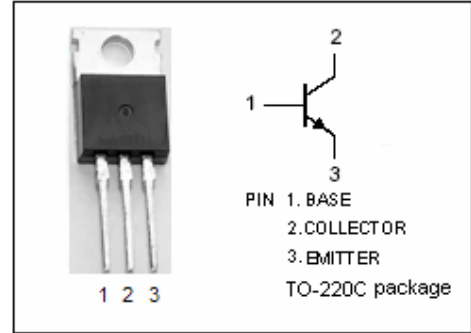
D44Q1/3/5

DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
 :  $V_{CEO(SUS)} = 125V(\text{Min})$ - D44Q1  
   =  $175V(\text{Min})$ - D44Q3  
   =  $225V(\text{Min})$ - D44Q5
- High Switching Speed
- Low Saturation Voltage

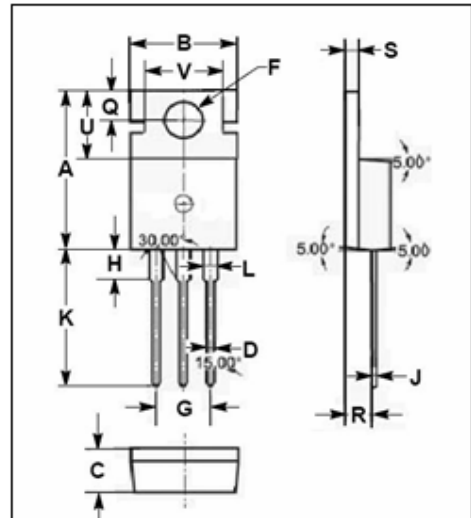
APPLICATIONS

- Designed for linear and switching applications.



ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT	
$V_{CBO}$	Collector-Base Voltage	D44Q1	200	V
		D44Q3	250	
		D44Q5	300	
$V_{CEO}$	Collector-Emitter Voltage	D44Q1	125	V
		D44Q3	175	
		D44Q5	225	
$V_{EBO}$	Emitter-Base Voltage	7	V	
$I_C$	Collector Current-Continuous	4	A	
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	31.25	W	
$P_C$	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	1.67		
$T_J$	Junction Temperature	150	$^\circ\text{C}$	
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$	



DIM	mm	
	MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	4	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	75	$^\circ\text{C/W}$

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## D44Q1/3/5

## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	D44Q1	$I_C=10\text{mA}; I_B=0$			V
		D44Q3				
		D44Q5				
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.2\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.2\text{A}$			1.3	V
$I_{CBO}$	Collector Cutoff Current	D44Q1				$\mu\text{A}$
		D44Q3				
		D44Q5				
$h_{FE-1}$	DC Current Gain	$I_C=0.2\text{A}; V_{CE}=10\text{V}$	30			
$h_{FE-2}$	DC Current Gain	$I_C=2\text{A}; V_{CE}=10\text{V}$	20			
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.1\text{A}; V_{CE}=10\text{V}$		20		MHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f=1\text{MHz}$		32		pF

## Switching Times

$t_{on}$	Delay Time	$V_{CC}=50\text{V}$ $I_C=1\text{A}; I_{B1}=-I_{B2}=0.1\text{A}$			0.4	$\mu\text{s}$
$t_{stg}$	Storage Time		5		2.0	$\mu\text{s}$
$t_f$	Fall Time				1.7	$\mu\text{s}$