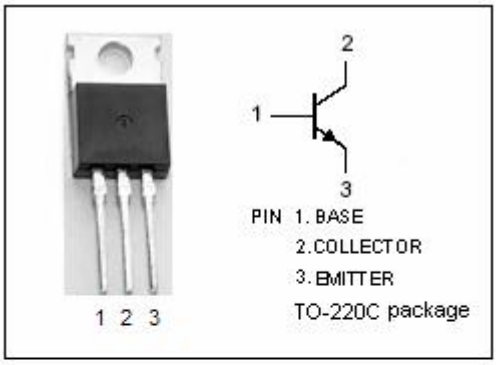
isc Silicon NPN Power Transistors — D44VH Series

DESCRIPTION

- Low Saturation Voltage
- Fast Switching Speed
- Complement to Type D45VH Series
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for high-speed switching applications, such as switching regulators and high frequency inverters. They are also well-suited for drivers for high power switching circuits.

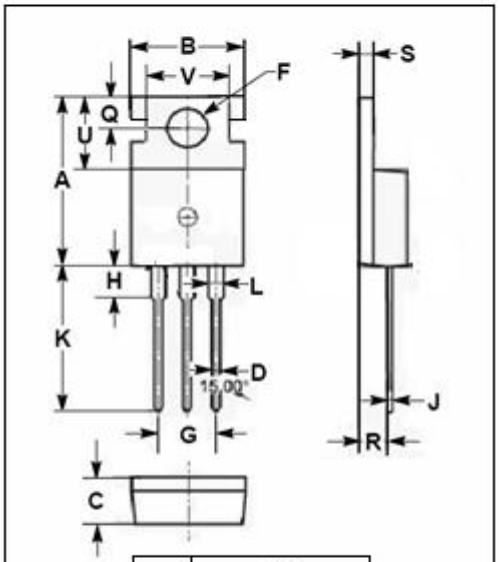


ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage	D44VH 1	50	V
		D44VH 4	70	
		D44VH 7	80	
		D44VH 10	100	
V_{CEO}	Collector-Emitter Voltage	D44VH 1	30	V
		D44VH 4	45	
		D44VH 7	60	
		D44VH 10	80	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		15	A
I_{CM}	Collector Current-Peak		20	A
P_C	Collector Power Dissipation @T_C=25℃		83	W
T_j	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-55~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.5	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	62.5	℃/W



DIM	mm MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	D44VH 1	I_C= 25mA ;I_B= 0	30			V
		D44VH 4		45			
		D44VH 7		60			
		D44VH 10		80			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		I_C= 8A ;I_B= 0.4A			0.4	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		I_C= 15A ;I_B= 3A;T_C=100℃			0.8	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		I_C= 8A ;I_B= 0.4A I_C= 8A ;I_B= 0.4A;T_C=100℃			1.2 1.1	V
I_{CEV}	Collector Cutoff Current		V_{CE}=RatedV_{CE};$V_{BE(off)}$=4V V_{CE}=RatedV_{CE};$V_{BE(off)}$=4V;T_C=100℃			10 100	μA
I_{EBO}	Emitter Cutoff Current		V_{EB}= 7V; I_C= 0			10	μA
h_{FE-1}	DC Current Gain		I_C= 2A ; V_{CE}= 1V	35			
h_{FE-2}	DC Current Gain		I_C= 4A ; V_{CE}= 1V	20			
C_{OB}	Output Capacitance		I_E= 0;V_{CB}= 10V,f_{test}= 1.0MHz		120		pF
f_T	Current-Gain—Bandwidth Product		I_C= 0.1A;V_{CE}= 10V;f_{test}= 20MHz		50		MHz
Switching Times							
t_d	Delay Time		I_C= 8A; I_{B1}= -I_{B2}= 0.8A V_{CC}= 20V		50		ns
t_r	Rise Time				250		ns
t_s	Storage Time				700		ns
t_f	Fall Time				90		ns

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