

isc Silicon NPN Power Transistors

D44VH Series

DESCRIPTION

- Low Saturation Voltage
- Fast Switching Speed
- Complement to Type D45VH Series

APPLICATIONS

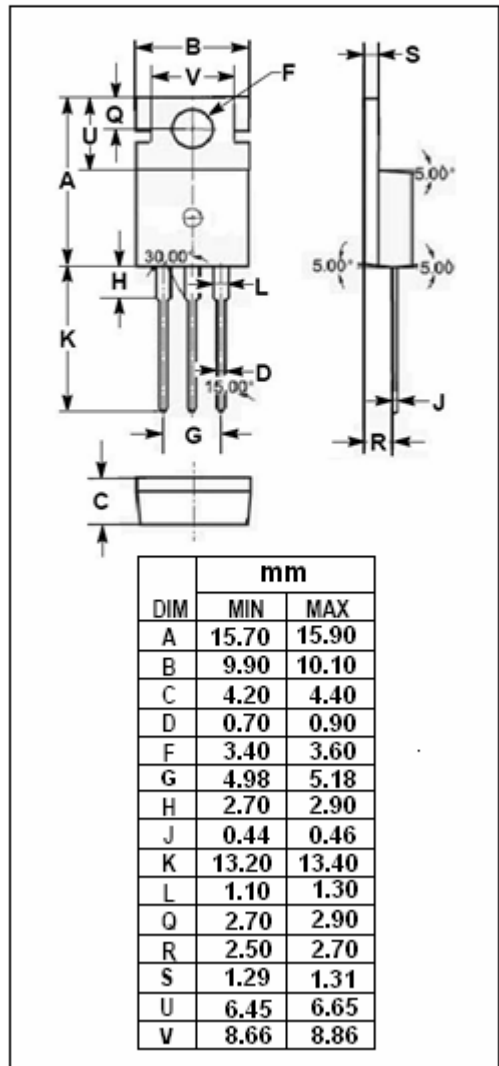
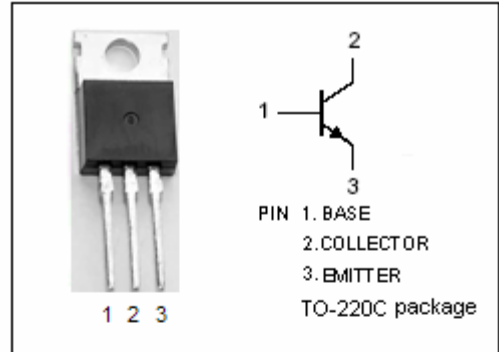
- Designed for high-speed switching applications, such as switching regulators and high frequency inverters. They are also well-suited for drivers for high power switching circuits.

ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

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°C	83	W	
T _j	Junction Temperature	150	°C	
T _{stg}	Storage Temperature Range	-55~150	°C	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance, Junction to Case	1.5	°C/W
R _{th j-a}	Thermal Resistance, Junction to Ambient	62.5	°C/W



isc Silicon NPN Power Transistors

D44VH Series

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	D44VH 1	$I_C=25\text{mA}; I_B=0$	30			V
		D44VH 4		45			
		D44VH 7		60			
		D44VH 10		80			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C=8\text{A}; I_B=0.4\text{A}$			0.4	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C=15\text{A}; I_B=3\text{A}; T_C=100^\circ\text{C}$			0.8	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C=8\text{A}; I_B=0.4\text{A}$ $I_C=8\text{A}; I_B=0.4\text{A}; T_C=100^\circ\text{C}$			1.2	V
						1.1	
I_{CEV}	Collector Cutoff Current		$V_{CE}=\text{Rated } V_{CE}; V_{BE(off)}=4\text{V}$ $V_{CE}=\text{Rated } V_{CE}; V_{BE(off)}=4\text{V}; T_C=100^\circ\text{C}$			10 100	μA
I_{EBO}	Emitter Cutoff Current		$V_{EB}=7\text{V}; I_C=0$			10	μA
h_{FE-1}	DC Current Gain		$I_C=2\text{A}; V_{CE}=1\text{V}$	35			
h_{FE-2}	DC Current Gain		$I_C=4\text{A}; V_{CE}=1\text{V}$	20			
C_{OB}	Output Capacitance		$I_E=0; V_{CB}=10\text{V}; f_{\text{test}}=1.0\text{MHz}$		120		pF
f_T	Current-Gain—Bandwidth Product		$I_C=0.1\text{A}; V_{CE}=10\text{V}; f_{\text{test}}=20\text{MHz}$		50		MHz

Switching Times

t_d	Delay Time	$I_C=8\text{A}; I_{B1}=-I_{B2}=0.8\text{A}$ $V_{CC}=20\text{V}$		50		ns
t_r	Rise Time			250		ns
t_s	Storage Time			700		ns
t_f	Fall Time			90		ns