

Silicon PNP Power Transistors

D45VH Series

DESCRIPTION

- Low Saturation Voltage
- Fast Switching Speed
- Complement to Type D44VH Series

APPLICATIONS

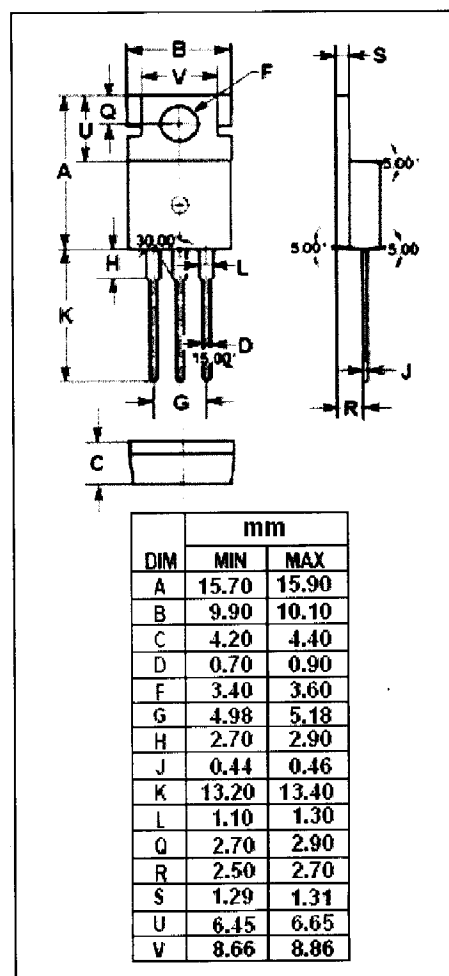
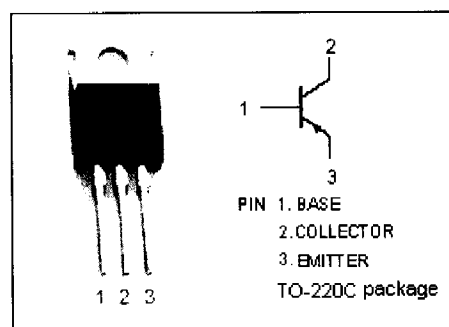
- Designed for high-speed switching applications, such as switching regulators and high frequency inverters. They are also well-suited for drivers for high power switching circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage	D45VH 1	-50
		D45VH 4	-70
		D45VH 7	-80
		D45VH 10	-100
V_{CEO}	Collector-Emitter Voltage	D45VH 1	-30
		D45VH 4	-45
		D45VH 7	-60
		D45VH 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 @ $T_c=25^\circ\text{C}$	83	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

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



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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	D45VH 1	$I_C = -25\text{mA}; I_B = 0$	-30			V
		D45VH 4		-45			
		D45VH 7		-60			
		D45VH 10		-80			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C = -8\text{A}; I_B = -0.8\text{A}$			-1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C = -15\text{A}; I_B = -3\text{A}; T_C=100^\circ\text{C}$			-1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C = -8\text{A}; I_B = -0.8\text{A}$ $I_C = -8\text{A}; I_B = -0.8\text{A}; T_C=100^\circ\text{C}$			-1.0 -1.5	V
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		$I_E = 0; V_{CB} = -10\text{V}; f_{\text{test}} = 1.0\text{MHz}$		275		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