

**Silicon PNP Power Transistors**

**D45VH Series**

**DESCRIPTION**

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

**APPLICATIONS**

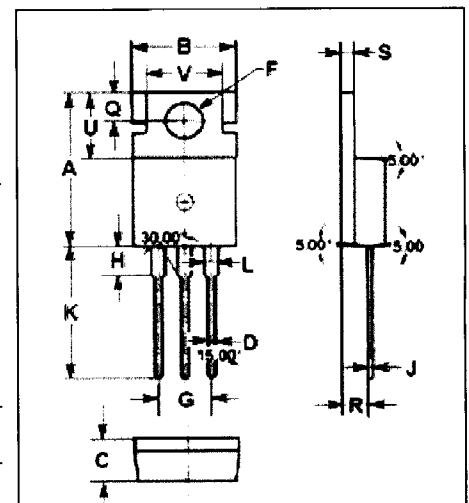
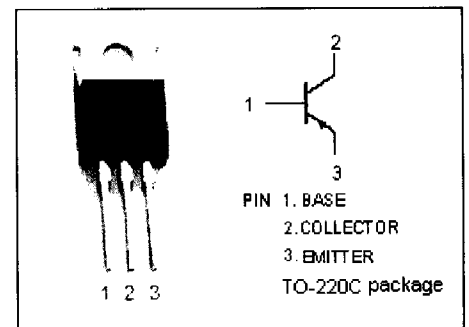
- Designed for high-speed switching applications, such as switching regulators and high frequency inverters. They are also well-suited for drivers for high power switching circuits.

**ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)**

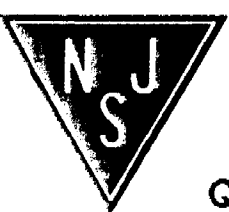
SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CEV</sub>	Collector-Emitter Voltage	D45VH 1	-50
		D45VH 4	-70
		D45VH 7	-80
		D45VH 10	-100
V <sub>CEO</sub>	Collector-Emitter Voltage	D45VH 1	-30
		D45VH 4	-45
		D45VH 7	-60
		D45VH 10	-80
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current-Continuous	-15	A
I <sub>CM</sub>	Collector Current-Peak	-20	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	83	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-55~150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	1.5	°C/W
R <sub>th j-a</sub>	Thermal Resistance, Junction to Ambient	62.5	°C/W



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



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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	-30			V
		D45VH 4	-45			
		D45VH 7	-60			
		D45VH 10	-80			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = -8A; I_B = -0.8A$			-1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = -15A; I_B = -3A; T_C = 100^\circ\text{C}$			-1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -8A; I_B = -0.8A$ $I_C = -8A; I_B = -0.8A; T_C = 100^\circ\text{C}$			-1.0 -1.5	V
$I_{CEV}$	Collector Cutoff Current	$V_{CE} = \text{Rated } V_{CE}; V_{BE(off)} = -4V$ $V_{CE} = \text{Rated } V_{CE}; V_{BE(off)} = -4V; T_C = 100^\circ\text{C}$			-10 -100	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -7V; I_C = 0$			-10	$\mu\text{A}$
$h_{FE-1}$	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	$I_E = 0; V_{CB} = -10V; f_{test} = 1.0\text{MHz}$		275		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C = 0.1A; V_{CE} = -10V; f_{test} = 20\text{MHz}$		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