

FP-757HD
CIRCUIT DIAGRAM

SPTECH Silicon NPN Power Transistor

2SD717

DESCRIPTION

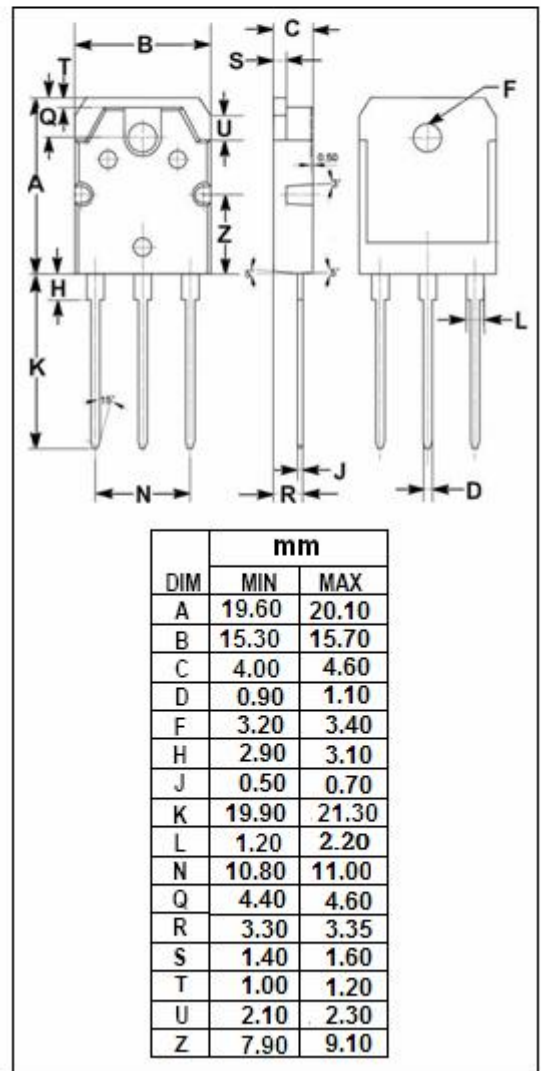
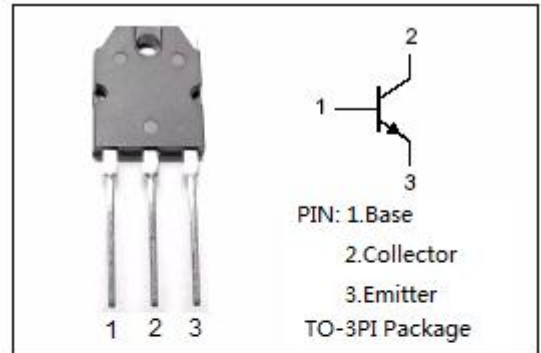
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 50V$ (Min)
- Low Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 0.4V$ (Max)@ $I_C = 6.0A$
- High Collector Power Dissipation
: $P_C = 80W$ @ $T_C = 25^\circ C$

APPLICATIONS

- High power switching applications
- DC-DC converter and DC-AC inverter applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	70	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	10	A
I_B	Base Current-Continuous	2.5	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ C$	80	W
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-55~150	$^\circ C$



ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}; I_B=0$	50			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.3\text{A}$			0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.3\text{A}$			1.2	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=70\text{V}; I_E=0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	μA
h_{FE-1}	DC Current Gain	$I_C=1\text{A}; V_{CE}=1\text{V}$	70		240	
h_{FE-2}	DC Current Gain	$I_C=6\text{A}; V_{CE}=1\text{V}$	30			
f_T	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=4\text{V}$		10		MHz
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$		350		pF

Switching times

t_{on}	Turn-on Time	$I_C=6\text{A}, I_{B1}=I_{B2}=0.3\text{A};$ $R_L=5\Omega; V_{CC}=30\text{V};$ $P_W=20\mu\text{s}; \text{Duty Cycle} \leq 1\%$		0.3		μs
t_{stg}	Storage Time			2.5		μs
t_f	Fall Time			0.4		μs

◆ **h_{FE-1} Classifications**

O	Y
70-140	120-240