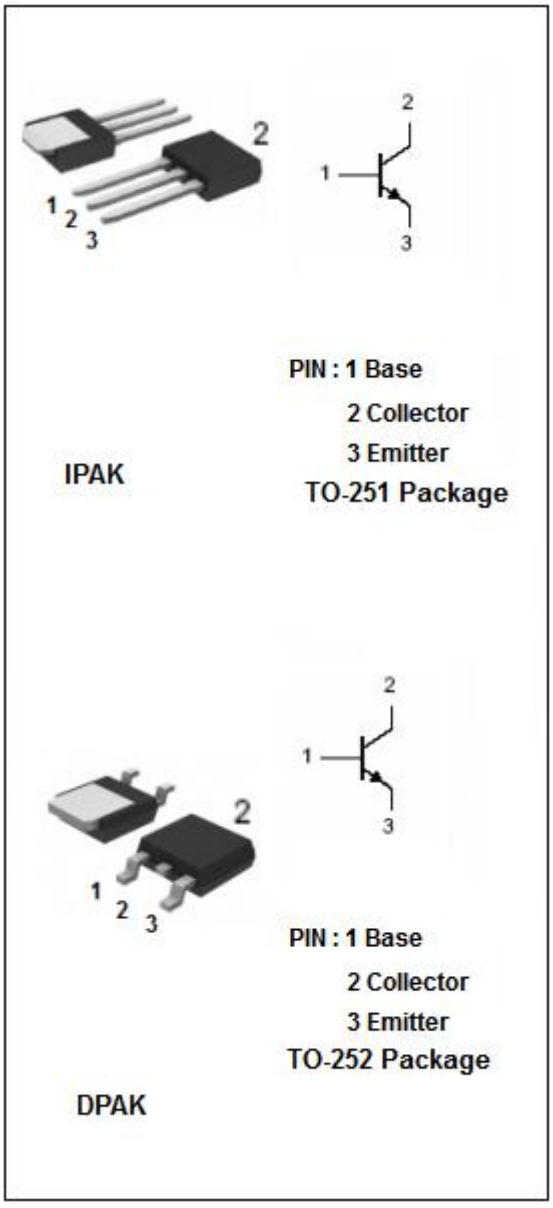
SPTECH Silicon NPN Power Transistors

DESCRIPTION

- Low Collector-Emitter Saturation Voltage
  : $V_{CE(sat)}$= 1.0V(Max)@ I_C = 8A
- Fast Switching Speeds
- Complement to Type MJD45H11
- DPAK for Surface Mount Applications
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for general purpose power amplification and switching such as output or driver stages in applications such as switching regulators,converters and power amplifier.



ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	8	A
I_{CM}	Collector Current-Peak	16	A
P_C	Collector Power Dissipation @T_C=25℃	20	W
	Collector Power Dissipation @T_a=25℃	1.75	
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	6.25	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	71.4	℃/W

SPTECH Silicon NPN Power Transistors

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

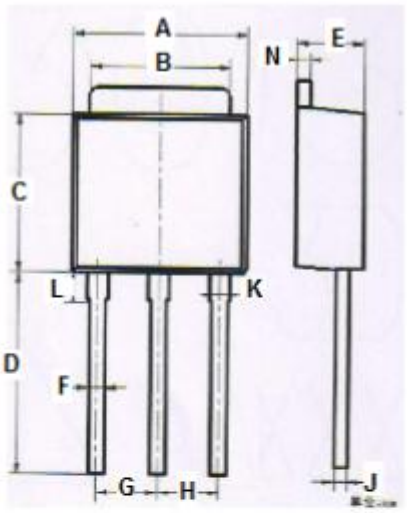
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 30mA; I_B= 0	80		V	
$V_{CE(sat)}$	Collector-EmitterSaturation Voltage	I_C= 8A ;I_B= 0.4 A			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 8A ;I_B= 0.8 A			1.5	V
I_{CES}	Collector Cutoff Current	V_{CE}=Rated V_{CEO}; V_{BE}= 0			1.0	μ A
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			1.0	μ A
h_{FE-1}	DC Current Gain	I_C= 2A ; V_{CE}= 1V	60			
h_{FE-2}	DC Current Gain	I_C= 4A ; V_{CE}= 1V	40			
C_{OB}	Output Capacitance	V_{CB}= 10V,f= 1.0MHz		45		pF
f_T	Current-Gain—Bandwidth Product	I_C=0.5A;V_{CE}= 10V;f_{test}=20MHz		40		MHz

Switching Times; Resistive Load

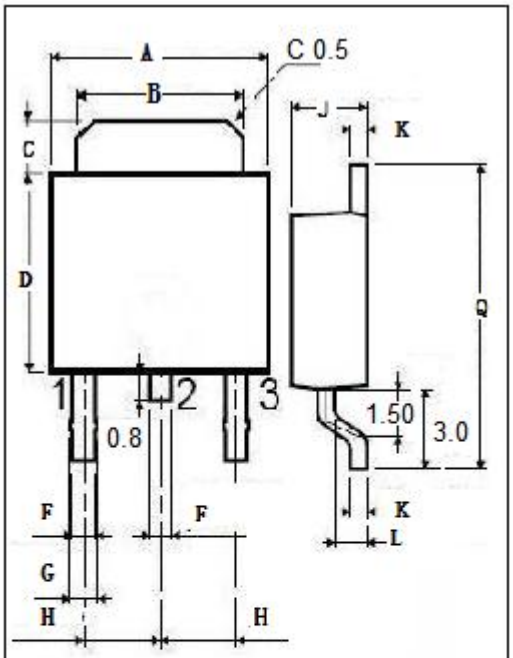
td+tr	Delay and Rise Time	I_C= -5A; I_{B1}= I_{B2}= -0.5A		300		ns
t_s	Storage Time			500		ns
t_f	Fall Time			140		ns

SPTECH Silicon NPN Power Transistors

Outline Drawing



DIM	mm MIN	MAX
A	6.40	6.48
B	5.10	5.50
C	5.80	6.20
D	9.20	9.60
E	2.20	2.40
F	0.50	0.70
G	2.09	2.49
H	2.09	2.49
J	0.40	0.60
K	0.70	0.90
L	1.60	2.00
N	0.40	0.60



DIM	mm MIN	MAX
A	6.40	6.60
B	5.20	5.40
C	1.15	1.35
D	5.70	6.10
F	0.65	
G	0.75	
H	2.10	2.50
J	2.10	2.40
K	0.40	0.60
L	0.90	1.10
Q	9.90	10.1