

SPTECH Product Specification

SPTECH Silicon NPN Power Transistors

MJD44H11

DESCRIPTION

- Low Collector-Emitter Saturation Voltage
: $V_{CE(sat)} = 1.0V(\text{Max}) @ I_C = 8A$
- 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

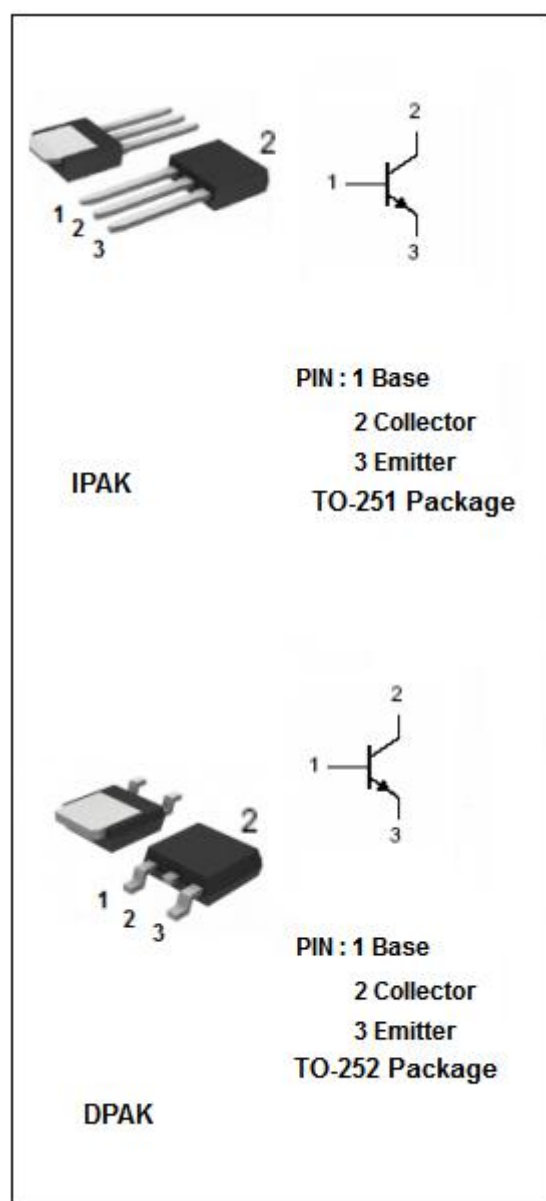
- Designed for general purpose power amplification and switching such as output or driver stages in applications such as switching regulators, converters and power amplifier.

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

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 @ $T_C=25^\circ\text{C}$	20	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	1.75	
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	6.25	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	71.4	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C 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-Emitter Saturation 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

t _d +t _r	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

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Outline Drawing

