

# isc Silicon NPN Darlington Power Transistor

# MJD112

### DESCRIPTION

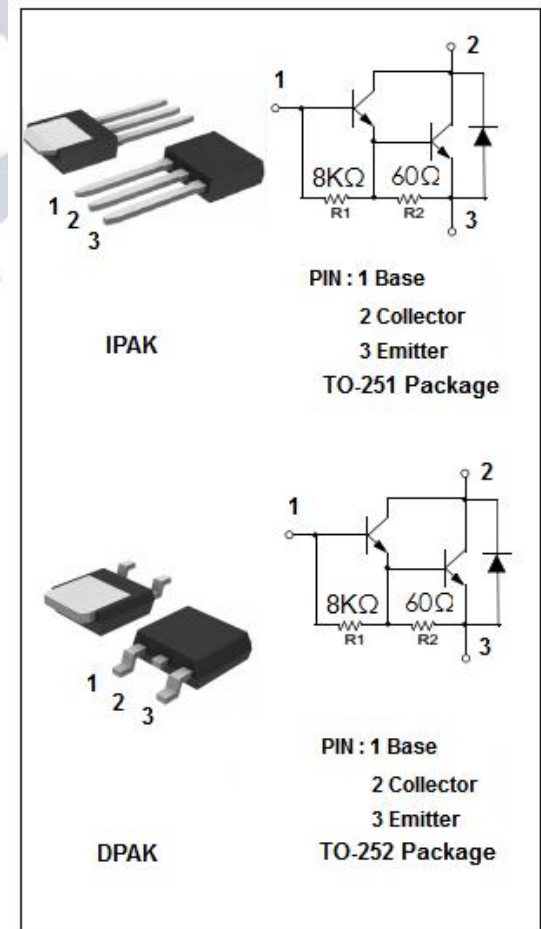
- High DC current gain
- Lead formed for surface mount applications(NO suffix)
- Straight lead(IPAK, “-I” suffix)
- Built-in a damper diode at E-C
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

- Designed for general purpose amplifier and low speed switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CB0</sub>	Collector-Base Voltage	100	V
V <sub>CEO</sub>	Collector-Emitter Voltage	100	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current-Continuous	2	A
I <sub>CP</sub>	Collector Current-Pulse	4	A
P <sub>C</sub>	Collector Power Dissipation T <sub>a</sub> =25°C	1.75	W
P <sub>C</sub>	Collector Power Dissipation T <sub>C</sub> =25°C	20	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-55~150	°C



**isc Silicon NPN Darlington Power Transistor****MJD112****ELECTRICAL CHARACTERISTICS****T<sub>c</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE(sat)-1*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 8mA			2.0	V
V <sub>CE(sat)-2*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 40mA			3.0	V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 40mA			4.0	V
V <sub>BE(on)*</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 2A; V <sub>CE</sub> = 3V			2.8	V
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 30mA; I <sub>B</sub> = 0	100			V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 50V; I <sub>E</sub> = 0			20	uA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			2	mA
h <sub>FE-1*</sub>	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 3V	500			
h <sub>FE-2*</sub>	DC Current Gain	I <sub>C</sub> = 2A; V <sub>CE</sub> = 3V	1K		12K	
h <sub>FE-3*</sub>	DC Current Gain	I <sub>C</sub> = 4A; V <sub>CE</sub> =3V	200			
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f= 1.0MHz		100		pF
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.75A; V <sub>CE</sub> = 10V		25		MHz

\*:Pulse test PW≤300us,duty cycle≤2%

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Outline Drawing

