

isc Silicon NPN Darlington Power Transistor

MJD6039

DESCRIPTION

- Collector–Emitter Sustaining Voltage–
: $V_{CEO(SUS)} = 80V(\text{Min})$
- High DC Current Gain–
: $h_{FE} = 500(\text{Min})@I_C = 2A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

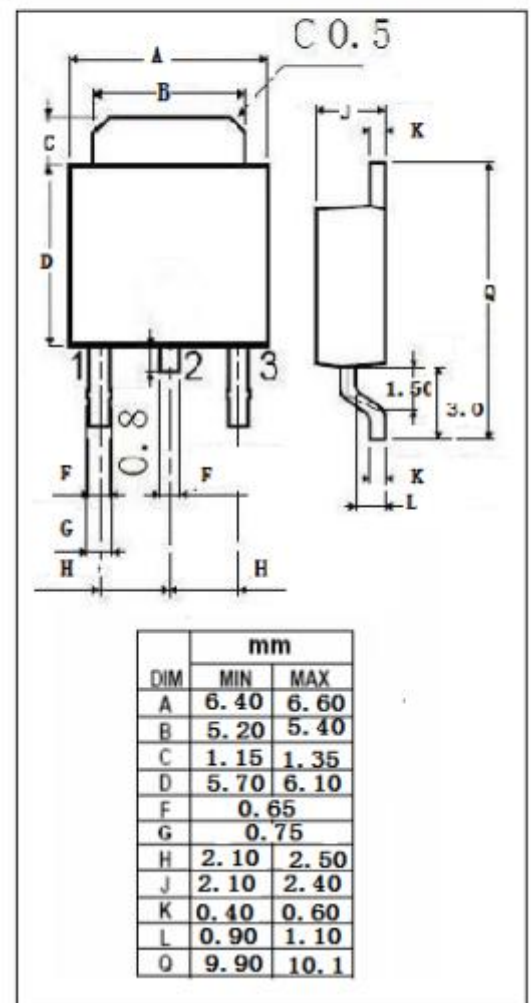
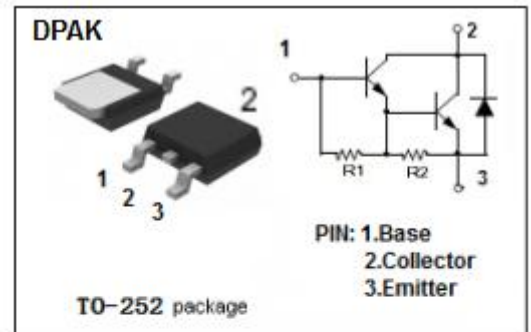
- Designed for general purpose switching and amplifier applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	4	A
I_{CM}	Collector Current-Peak	8	A
I_B	Base Current	0.1	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	-65~150	$^\circ\text{C}$

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	$^\circ\text{C/W}$



isc Silicon NPN Darlington Power Transistor**MJD6039****ELECTRICAL CHARACTERISTICS****T_c =25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	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 = 2 A ;I _B = 8mA		2.5	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 2A ;V _{CE} = 4V		2.8	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 80V; I _E = 0		0.1	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = 40V; I _B = 0		10	uA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0		2.0	mA
h _{FE-1}	DC Current Gain	I _C = 1 A ; V _{CE} = 4V	1000		
h _{FE-2}	DC Current Gain	I _C = 2A ; V _{CE} = 4V	500		
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} = 1.0MHz		100	pF

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