

**isc Silicon NPN Power Transistor**
**2SC5103**
**DESCRIPTION**

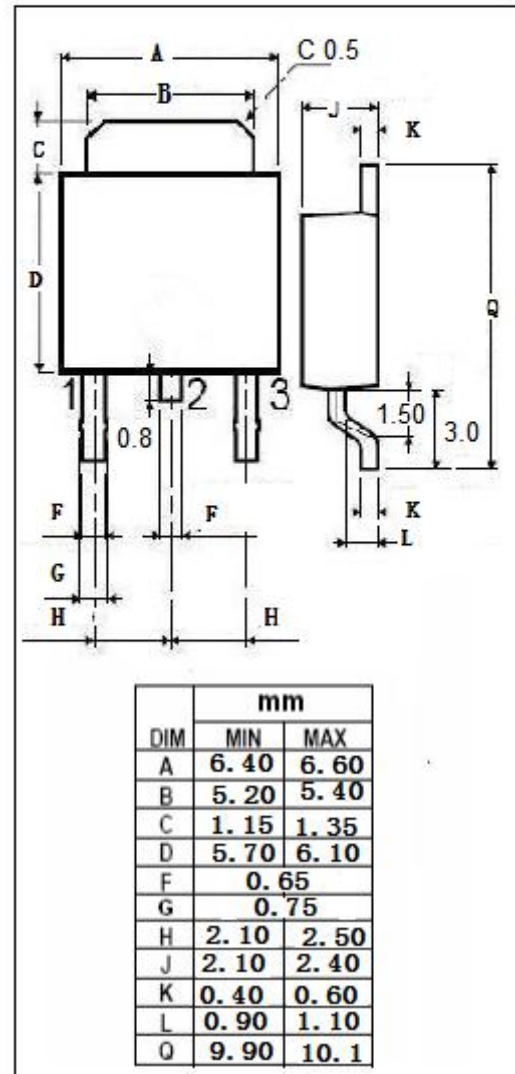
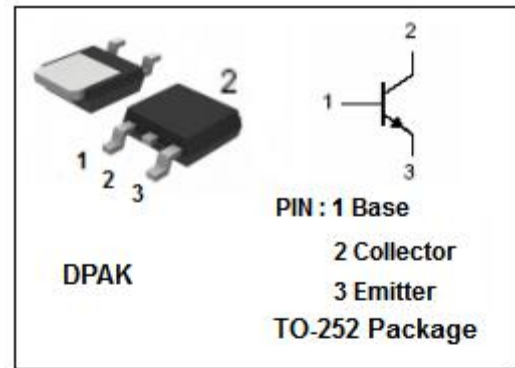
- High Collector Current  $-I_C = 5A$
- Low Collector Saturation Voltage
- Complement to Type 2SA1952
- Minimum Lot-to-Lot variations for robust device performance and reliable operation.

**APPLICATIONS**

- Designed for use in high speed switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	5	A
$I_{CP}$	Collector Current-Pulse	10	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ C$	10	W
	Collector Power Dissipation @ $T_a=25^\circ C$	1.0	
$T_J$	Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ C$



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## 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> = 3A; I <sub>B</sub> = 0.15A			0.3	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 0.2A			0.5	V
V <sub>BE(sat)-1</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 3A; I <sub>B</sub> = 0.15A			1.2	V
V <sub>BE(sat)-2</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 0.2A			1.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> =100V; I <sub>E</sub> = 0			10	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			10	μ A
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 1A; V <sub>CE</sub> = 2V	82		270	
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.5A ; V <sub>CE</sub> = 10V;f=30MHz		120		MHz
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V;f <sub>test</sub> =1.0MHz		80		pF

## Switching Times

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 3A, I <sub>B1</sub> = I <sub>B2</sub> = 0.15A; R <sub>L</sub> = 10 Ω ; V <sub>CC</sub> ≈ 30V			0.3	μ s
t <sub>stg</sub>	Storage Time				1.5	μ s
t <sub>f</sub>	Fall Time				0.3	μ s

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