

isc Silicon NPN Power Transistor

2SC5103

DESCRIPTION

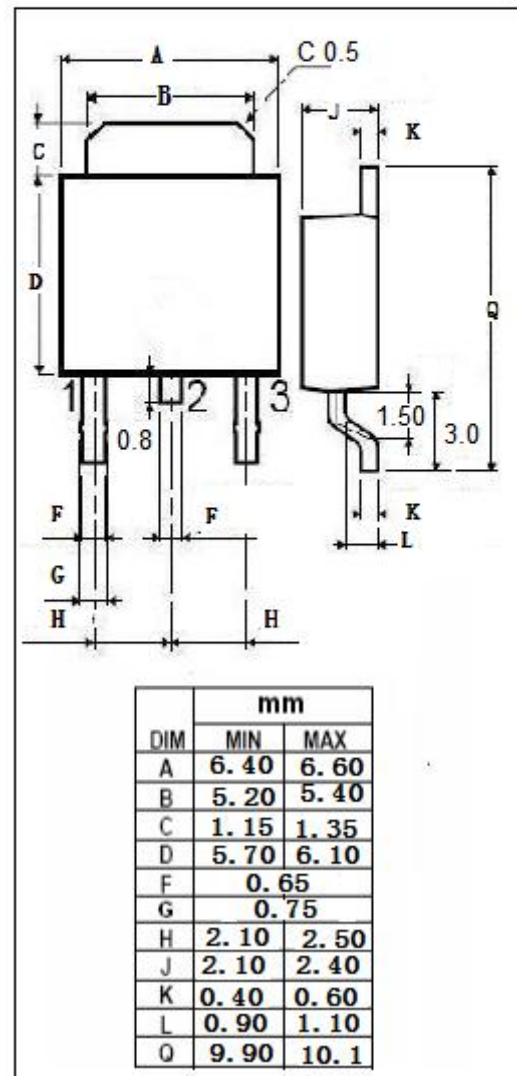
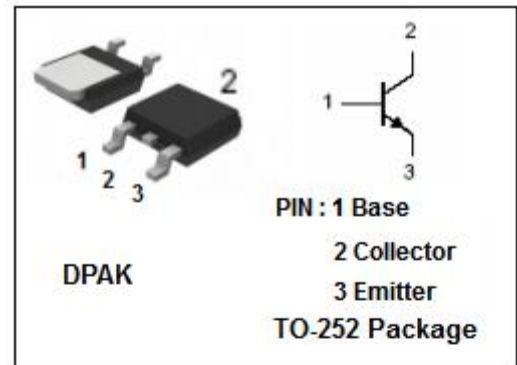
- High Collector Current $-I_C = 5A$
- Low Collector Saturation Voltage
- Complement to Type 2SA1952
- Minimum Lot-to-Lot variations for robust device performance and reliable operation.

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	$^{\circ}C$



isc Silicon NPN Power Transistor**2SC5103****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 3A; I_B = 0.15A$			0.3	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 4A; I_B = 0.2A$			0.5	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C = 3A; I_B = 0.15A$			1.2	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C = 4A; I_B = 0.2A$			1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=100V; I_E = 0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}= 5V; I_C = 0$			10	μA
h_{FE}	DC Current Gain	$I_C = 1A; V_{CE} = 2V$	82		270	
f_T	Current-Gain—Bandwidth Product	$I_C = 0.5A; V_{CE} = 10V, f=30\text{MHz}$		120		MHz
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10V; f_{test}=1.0\text{MHz}$		80		pF

Switching Times

t_{on}	Turn-on Time	$I_C = 3A, I_{B1} = I_{B2} = 0.15A;$ $R_L = 10\Omega; V_{CC} \approx 30V$			0.3	μs
t_{stg}	Storage Time				1.5	μs
t_f	Fall Time				0.3	μs

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