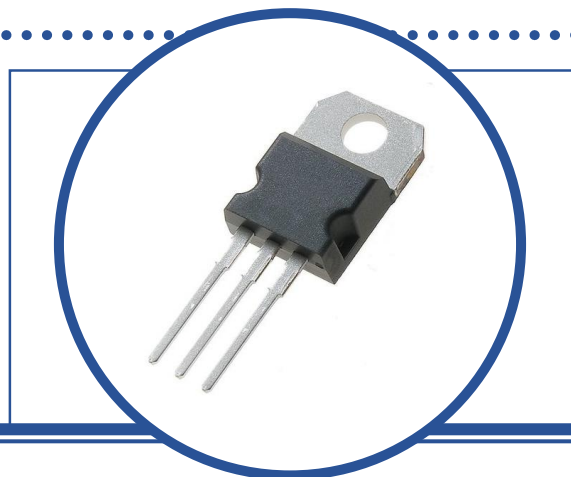


HIGH-CURRENT SILICON NPN TRANSISTOR

2N6098-2N6103

- TO-220 Plastic Package
- High current capability
- General purpose amplifier and switching applications

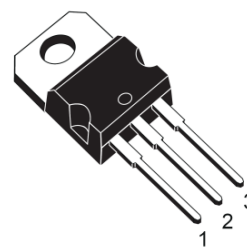
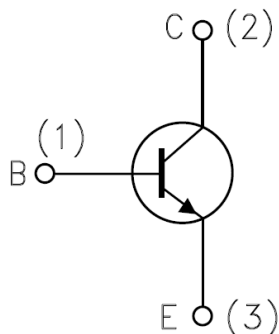


ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

		2N6102 2N6103	2N6098 2N6099	2N6100 2N6101
V _{CBO}	Collector – Base Voltage	45V	70V	80V
V _{CER(sus)}	Collector – Emitter Voltage R _{BE} = 100Ω	45V	65V	75V
V _{CEO(sus)}	Collector – Emitter Voltage Base open	40V	60V	70V
V _{EBO}	Emitter – Base Voltage	5V	8V	8V
I _C	Continuous Collector Current	16A	10A	10A
I _B	Base Current	----- 4A -----		
P _D	Total Power Dissipation at T _C = 25°C T _A = 25°C	----- 75W -----		
T _J	Maximum Junction Temperature	----- 1.8W -----		
T _{stg}	Storage Temperature Range	150°C		
		-65 to +150°C		

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
R _{θJC}	Thermal Resistance, Junction To Case			1.67	°C/W
R _{θJA}	Thermal Resistance, Junction To Ambient			70	°C/W



TO-220

Magnatec reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Magnatec is believed to be both accurate and reliable at the time of going to press. However Magnatec assumes no responsibility for any errors or omissions discovered in its use. Magnatec encourages customers to verify that datasheets are current before placing orders.

HIGH-CURRENT SILICON NPN TRANSISTOR 2N6098-2N6103



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	2N6102 2N6103		2N6098 2N6099		2N6100 2N6101		Units
			Min	Max	Min	Max	Min	Max	
I_{CEX}	Collector-Cut-Off Current	$V_{CE} = 40V$ $V_{EB} = 1.5V$ $V_{CE} = 65V$ $V_{EB} = 1.5V$ $V_{CE} = 75V$ $V_{EB} = 1.5V$		2		2		2	mA
I_{CEX} ($T_C = 25^\circ\text{C}$)	Collector-Cut-Off Current	$V_{CE} = 40V$ $V_{EB} = 1.5V$ $V_{CE} = 65V$ $V_{EB} = 1.5V$ $V_{CE} = 75V$ $V_{EB} = 1.5V$		10		10		10	
I_{CEOI}	Collector-Cut-Off Current	$V_{CE} = 30V$ $I_B = 0$ $V_{CE} = 50V$ $I_B = 0$ $V_{CE} = 60V$ $I_B = 0$		2		2		2	mA
I_{EBO}	Emitter-Cut-Off-Current	$V_{EB} = 5V$ $I_C = 0$ $V_{EB} = 7V$ $I_C = 0$ $V_{EB} = 8V$ $I_C = 0$		1		1		1	
$V_{CER(sus)}$	Collector-Emitter Breakdown Voltage	$I_C = 0.2A$ $R_{BE} = 100\Omega$	45		65		75		V
$V_{CEO(sus)}$	Collector-Emitter Breakdown Voltage	$I_C = 0.2A$ $I_B = 0$	40		60		70		
$h_{FE}^{(1)}$	DC Current Gain	$I_C = 4A$ $V_{CE} = 4V$ $I_C = 5A$ $V_{CE} = 4V$ $I_C = 8A$ $V_{CE} = 4V$ $I_C = 10A$ $V_{CE} = 4V$ $I_C = 16A$ $V_{CE} = 4V$	15	60	5	80	20	80	
$V_{BE}^{(1)}$	Base-Emitter Voltage	$I_C = 4A$ $V_{CE} = 4V$ $I_C = 5A$ $V_{CE} = 4V$ $I_C = 8A$ $V_{CE} = 4V$		1.7		1.7		1.7	
$V_{CE(sat)}^{(1)}$	Base-Emitter Voltage	$I_C = 10A$ $I_B = 2A$ $I_C = 16A$ $I_B = 3.2A$		2.5		2.5		2.5	V
h_{fe}	Small Signal Current Gain	$I_C = 0.5A$ $V_{CE} = 4V$ $f = 1\text{kHz}$	15		15		15		
$ h_{fe} $	Magnitude of Common Emitter Small Signal Short Circuit Forward Current Transfer Ratio	$I_C = 0.5A$ $V_{CE} = 4V$ $f = 0.1\text{MHz}$	8	28	8	28	8	28	

Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 1.8\%$

HIGH-CURRENT SILICON NPN TRANSISTOR 2N6098-2N6103



MECHANICAL DATA

Dimensions in mm (inches)

TO-220 MECHANICAL DATA						
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151

