

Silicon NPN Power Transistors

2SC3179

DESCRIPTION

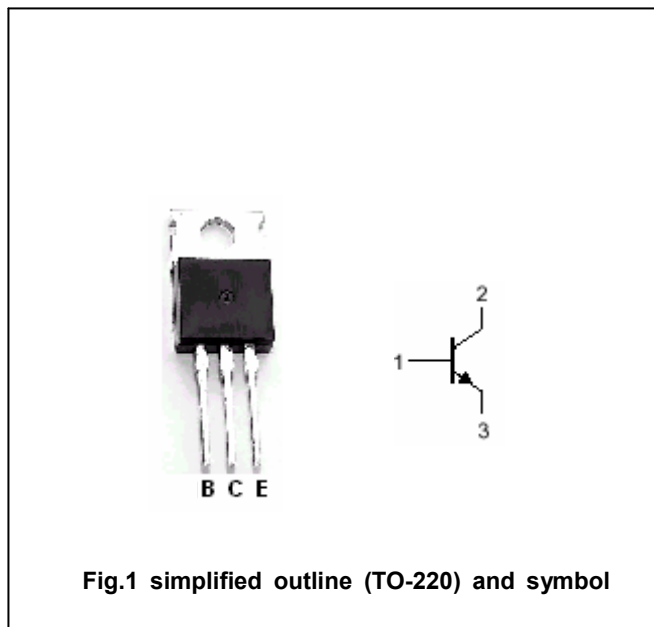
- With TO-220 package
- Complement to type 2SA1262
- Low collector saturation voltage

APPLICATIONS

- Audio and general purpose applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

**Absolute maximum ratings(Ta=25℃)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	80	V
V_{CEO}	Collector-emitter voltage	Open base	60	V
V_{EBO}	Emitter-base voltage	Open collector	6	V
I_C	Collector current		4	A
I_B	Base current		1	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	30	W
T_j	Junction temperature		150	℃
T_{stg}	Storage temperature		-55~150	℃

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CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=25mA, I_B=0$	60			V
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=2A; I_B=0.2A$			0.6	V
I_{CBO}	Collector cut-off current	$V_{CB}=80V; I_E=0$			100	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=6V; I_C=0$			100	μA
h_{FE}	DC current gain	$I_C=1A; V_{CE}=4V$	40			
f_T	Transition frequency	$I_E=-0.2A; V_{CE}=12V$		15		MHz
C_{OB}	Output capacitance	$f=1MHz; V_{CB}=10V$		60		pF

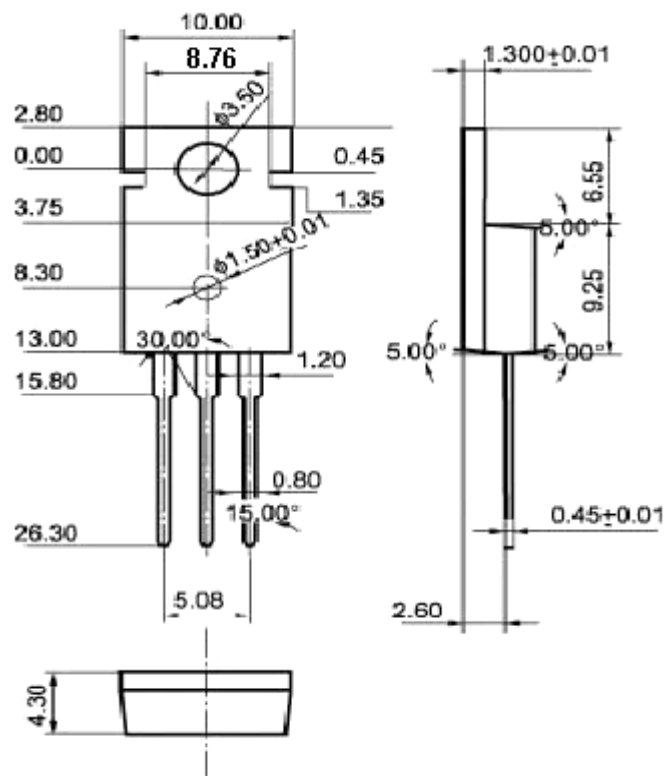
Switching times resistive load

t_{on}	Turn-on time	$I_C=2A, I_{B1}=-I_{B2}=0.2A$ $R_L=10\Omega; V_{CC}=20V$		0.2		μs
t_s	Storage time			1.9		μs
t_f	Fall time			0.29		μs

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PACKAGE OUTLINE

Fig.2 Outline dimensions(unindicated tolerance: ± 0.10 mm)

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Silicon NPN Triple Diffused Planar Transistor (Complement to type 2SA1262)

Application : Audio and General Purpose

■ Absolute maximum ratings (Ta=25°C)

Symbol	2SC3179	Unit
VCBO	80	V
VCEO	60	V
VEBO	6	V
Ic	4	A
IB	1	A
Pc	30(Tc=25°C)	W
Tj	150	°C
Tstg	-55 to +150	°C

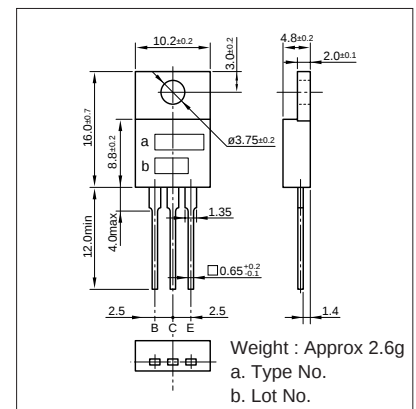
■Electrical Characteristics (Ta=25°C)

Symbol	Conditions	2SC3179	Unit
ICBO	V _{CB} =80V	100max	μA
IEBO	V _{EB} =6V	100max	μA
V _{(BR)CEO}	I _C =25mA	60min	V
h _{FE}	V _{CE} =4V, I _C =1V	40min	
V _{CE(sat)}	I _C =2A, I _B =0.2A	0.6max	V
f _T	V _{CE} =12V, I _E =-0.2A	15typ	MHz
COB	V _{CB} =10V, f=1MHz	60typ	pF

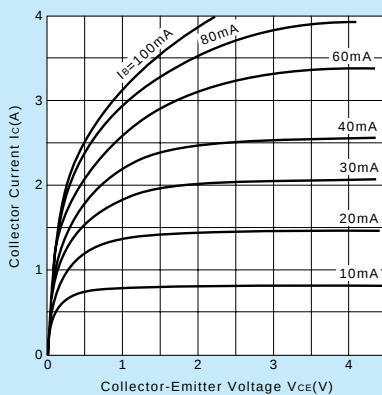
■ Typical Switching Characteristics (Common Emitter)

V _{CC} (V)	R _L (Ω)	I _C (A)	V _{BB1} (V)	V _{BB2} (V)	I _{B1} (mA)	I _{B2} (mA)	t _{on} (μs)	t _{stg} (μs)	t _f (μs)
20	10	2	10	-5	200	-200	0.2 _{typ}	1.9 _{typ}	0.29 _{typ}

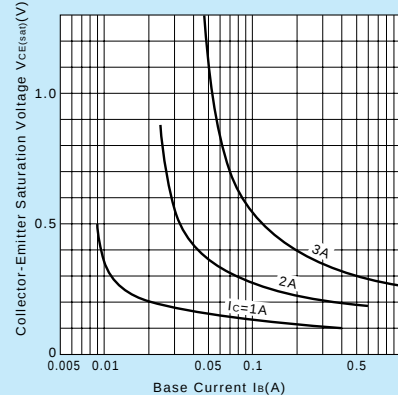
External Dimensions MT-25(TO220)



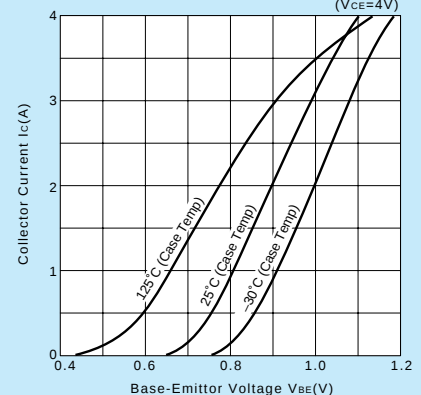
I_C-V_{CE} Characteristics (Typical)



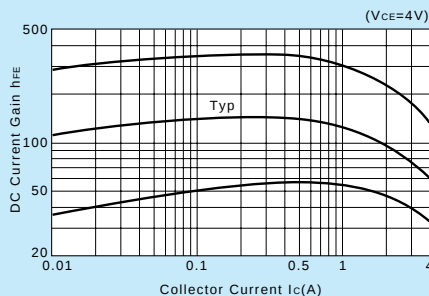
V_{CE(sat)}-I_B Characteristics (Typical)



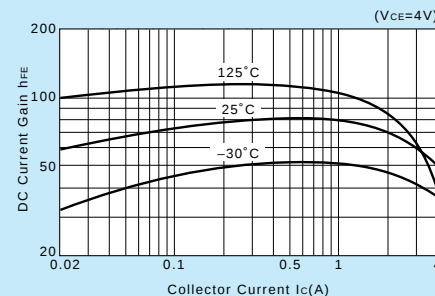
I_C-V_{BE} Temperature Characteristics (Typical)



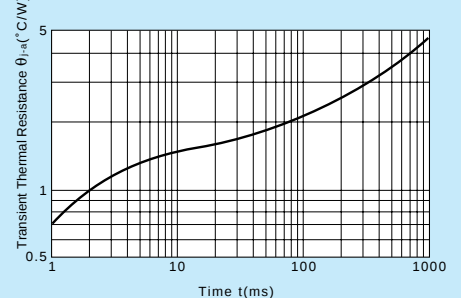
$h_{FE}-I_C$ Characteristics (Typical)



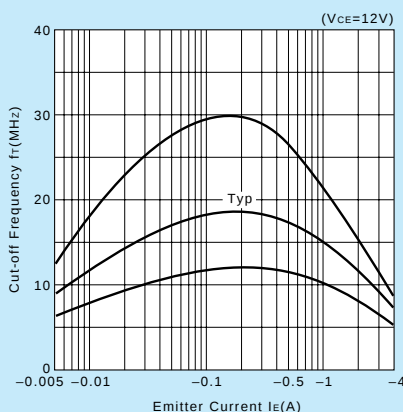
$h_{FE}-I_C$ Temperature Characteristics (Typical)



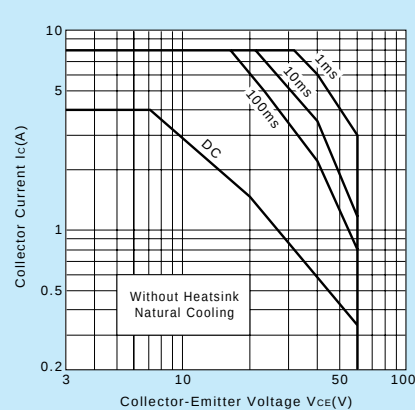
θ_{j-a-t} Characteristics



f_T-I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)



Pc-Ta Derating

