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ON Semiconductor DATA SHEET

NPN Epitaxial Planar Silicon Transistors

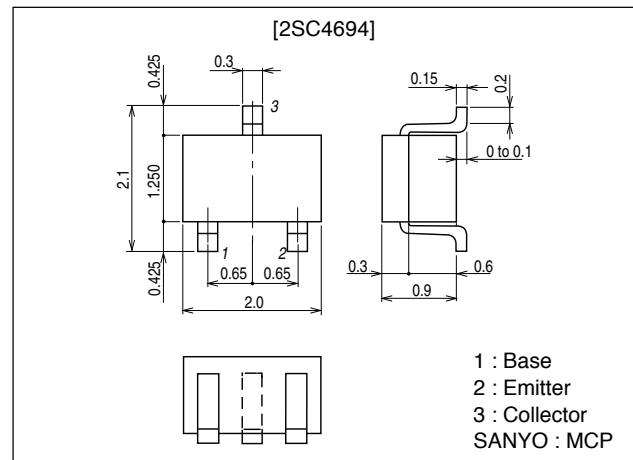
2SC4694 — Low-Frequency General-Purpose Amplifier, Muting Applications

Features

- Adoption of MBIT process.
- High DC current gain.
- High V_{EBO} ($V_{EBO} \geq 25V$).
- High reverse h_{FE} (150 typ).
- Small ON resistance [$R_{on} = 1\Omega$ ($I_B = 5mA$)].
- Ultrasmall-sized package permitting applied sets to be small and slim.

Package Dimensions

unit:mm
2059B



Specifications

Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		50	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		25	V
Collector Current	I_C		500	mA
Collector Current (Pulse)	I_{CP}		800	mA
Base Current	I_B		100	mA
Collector Dissipation	P_C		150	mW
Junction Temperature	T_J		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = 40V, I_E = 0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 20V, I_C = 0$			0.1	μA
DC Current Gain	h_{FE1}	$V_{CE} = 5V, I_C = 10mA$	300		1200	
Gain-Bandwidth Product	f_T	$V_{CE} = 10V, I_C = 10mA$		250		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10V, f = 1MHz$		3.6		pF

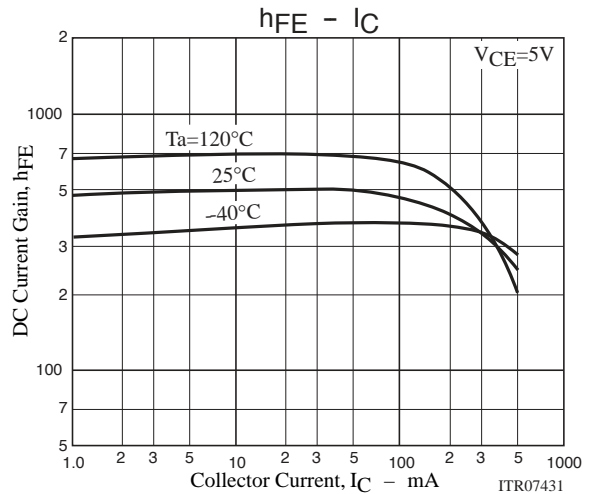
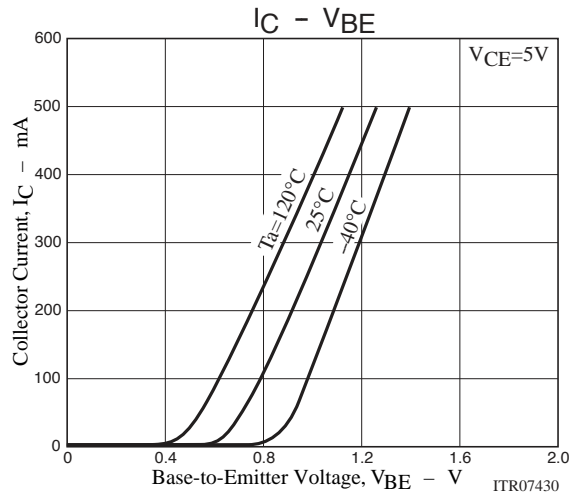
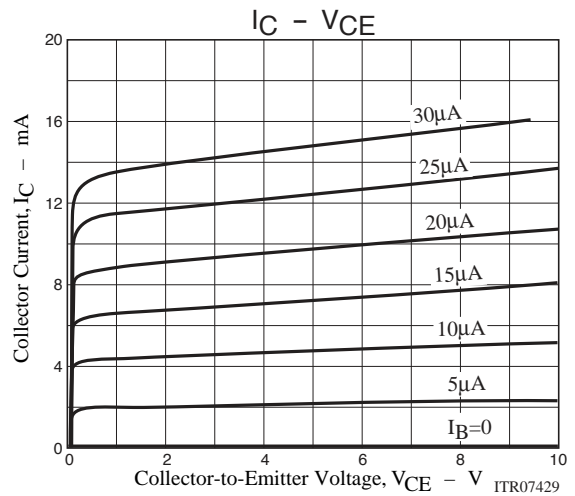
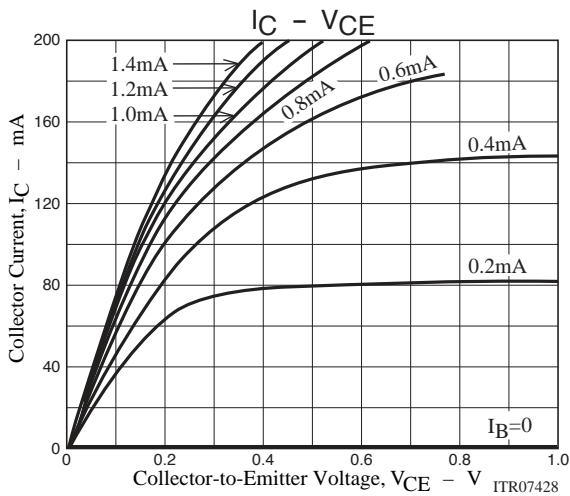
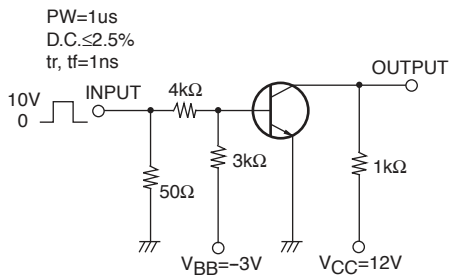
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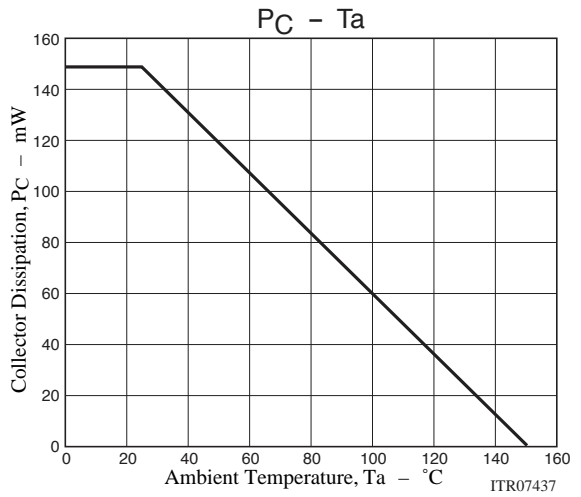
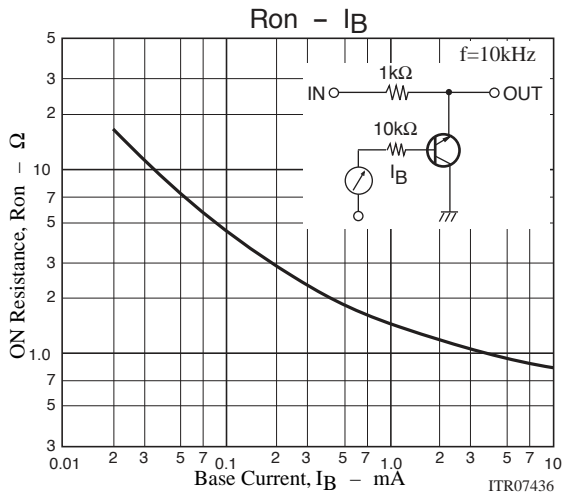
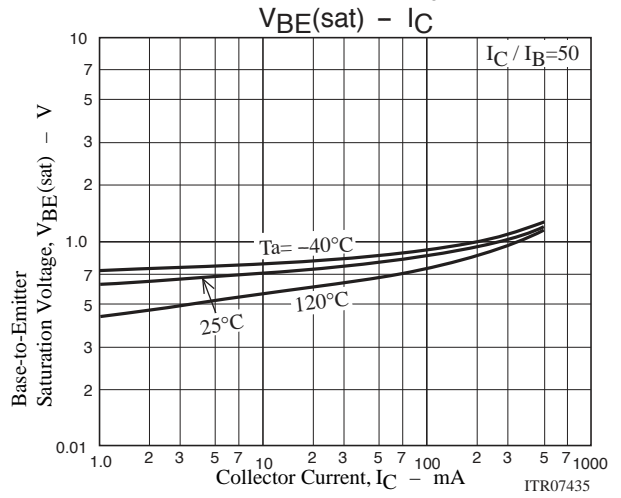
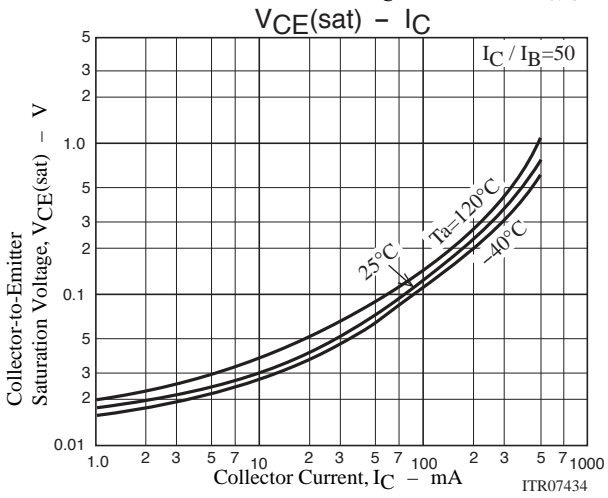
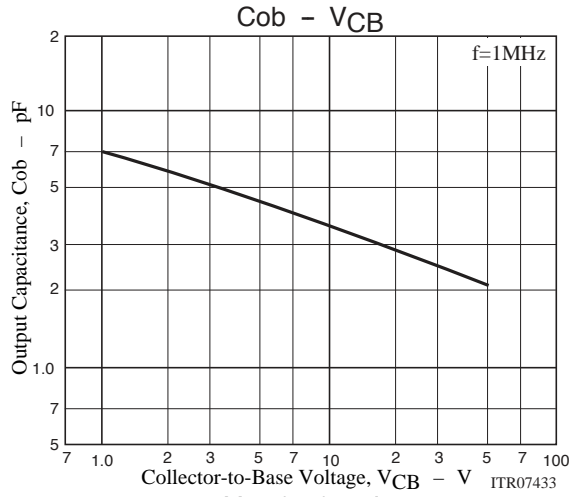
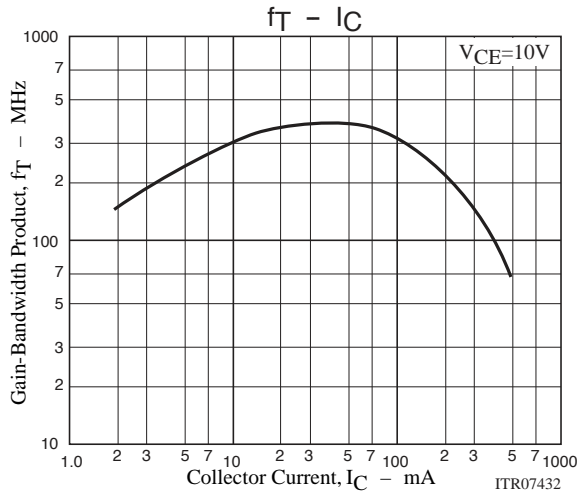
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=2mA$		0.12	0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=2mA$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	20			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	25			V
Turn-ON Time	t_{on}	See specified Test Circuit.		135		ns
Storage Time	t_{stg}	See specified Test Circuit.		450		ns
Fall Time	t_f	See specified Test Circuit.		100		ns

Switching Time Test Circuit





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