SGS-THOMSON
MICROELECTRONICS

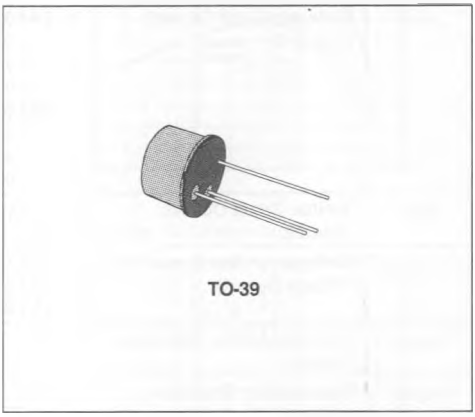
2N4895
2N4896/2N4897

HIGH CURRENT, FAST SWITCHING APPLICATIONS

DESCRIPTION

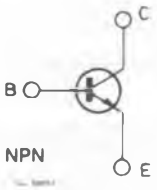
The 2N4895, 2N4896 and 2N4897 are silicon epitaxial planar NPN transistors in Jedec TO-3 metal case.

They are intended for high current, fast switching applicatliions and for power amplifiers.



TO-39

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	2N4895	2N4896	2N4897	Unit
V_{CBO}	Collector-base Voltage (I_E = 0)	120	120	150	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	60	60	80	V
V_{EBO}	Emitter-base Voltage (I_C = 0)		6		V
I_C	Collector Current		5		A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25°C$ $T_{case} \leq 25°C$ $T_{case} \leq 100°C$		1 7 4		W W W
T_{stg}	Storage Temperature		– 65 to 200		°C
T_j	Junction Temperature		200		°C

THERMAL DATA

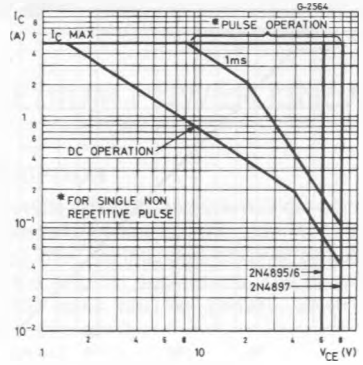
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	25	°C/W
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise specified)

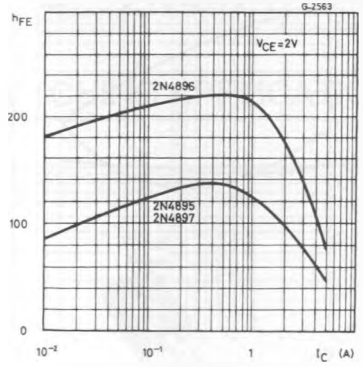
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current (V_{BE} = 0)	for **2N4895** and **2N4896** V_{CE} = 120V V_{CE} = 60V V_{CE} = 60V T_{case} = 150°C for **2N4897** V_{CE} = 150V V_{CE} = 100V V_{CE} = 100V T_{case} = 150°C			 1 1 100 1 1 100	 mA µA µA mA µA µA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 6V			1	mA
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = 50mA for **2N4895** and **2N4896** for **2N4897**	 60 80			 V V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 5A I_B = 0 .5A			1	V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 5A I_B = 0.5A			1.6	V
h_{FE}*	DC Current Gain	I_C = 2A V_{CE} = 2V for **2N4895** and **2N4897** for **2N4896** I_C = 2A V_{CE} = 2V T_{case} = – 55°C for **2N4895** and **2N4897** for **2N4896**	 40 100 15 35		 120 300	
f_T	Transistion Frequency	I_C = 0.5A V_{CE} = 5V for **2N4895** and **2N4897** for **2N4896**	 50 80			 MHz MHz
C_{CBO}	Collector-base Capacitance	I_E = 0 V_{CB} = 10V f = 1 MHz			80	pF
t_{on}	Turn-on Time	I_C = 5A V_{CC} = 20V I_{B1} = 0.5A			0.35	µs
t_s	Storage Time	I_C = 5A V_{CC} = 20V I_{B1} = – I_{B2} = 0.5A			0.35	µs
t_f	Fall Time				0.3	µs

* Pulsed : pulse duration = 300µs, duty cycle = 1.5%.

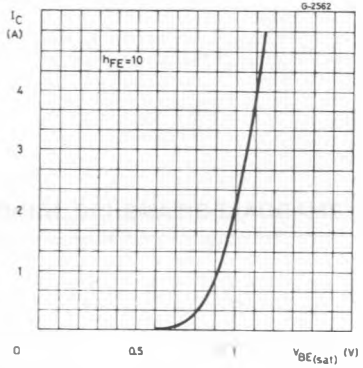
Safe Operating Areas



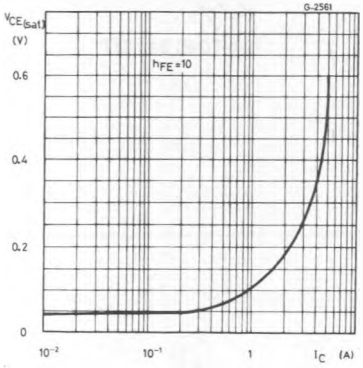
DC Current Gain.



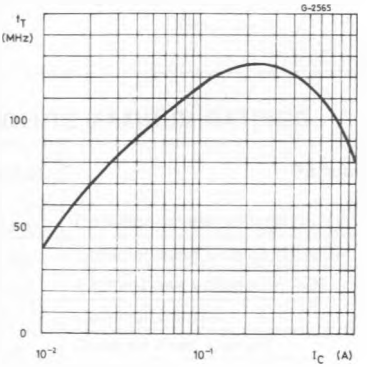
DC Transconductance.



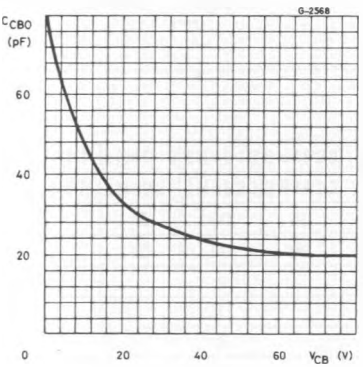
Collector-emitter Saturation Voltage.



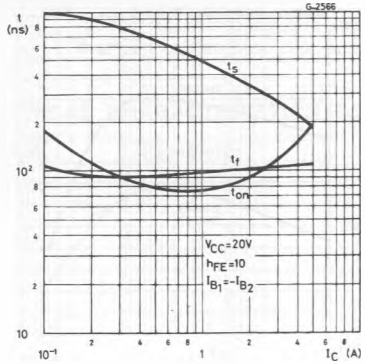
Transition Frequency.



Collector-base Capacitance.



Saturated Switching Characteristics.



Power Rating Chart.