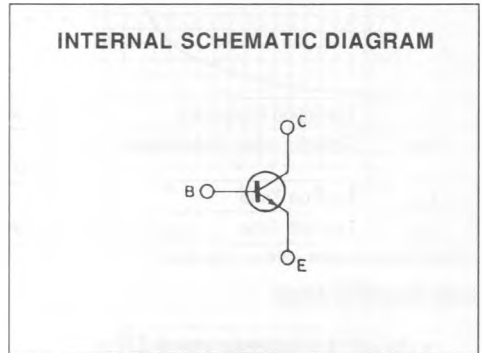
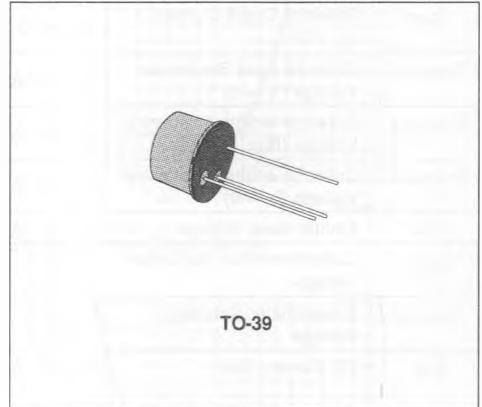


EPITAXIAL PLANAR NPN

DESCRIPTION

The BUY68 is a silicon epitaxial planar NPN transistor in Jedec TO-39 metal case. It is used for high-current switching applications and in power amplifiers. The BUY68 is available in 3 h_{FE} gain bands



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	100	V
V_{CER}	Collector-emitter Voltage ($R_{BE} \leq 10 \Omega$)	80	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	60	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	6	V
I_C	Collector Current	7	A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ C$ $T_{case} \leq 50^\circ C$	1	W
		10	W
T_{stg}	Storage Temperature	- 65 to 200	$^\circ C$
T_J	Junction Temperature	200	$^\circ C$

THERMAL DATA

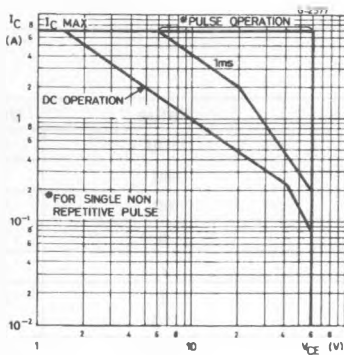
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	15	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

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

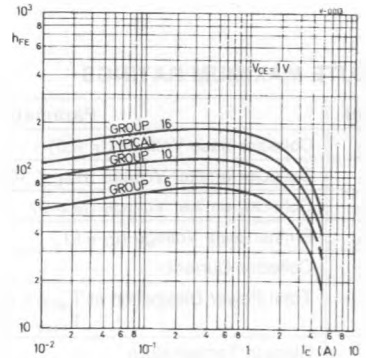
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit	
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 60\text{ V}$				1	μA	
$V_{(BR)CBO}^*$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 1\text{ mA}$		100			V	
$V_{CE(sus)}^*$	Collector-emitter Sustaining Voltage ($R_{BE} = 10\ \Omega$)	$I_C = 50\text{ mA}$		80			V	
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 50\text{ mA}$		60			V	
V_{EBO}^*	Emitter-base Voltage ($I_C = 0$)	$I_E = 1\text{ mA}$		6			V	
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 2\text{ A}$	$I_B = 0.2\text{ A}$			0.6	V	
		$I_C = 5\text{ A}$	$I_B = 0.5\text{ A}$			1	V	
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 2\text{ A}$	$I_B = 0.2\text{ A}$		1	1.3	V	
		$I_C = 5\text{ A}$	$I_B = 0.5\text{ A}$		1.2	1.6	V	
h_{FE}^*	DC Current Gain	$I_C = 0.1\text{ A}$	$V_{CE} = 1\text{ V}$	40	130			
			Group 6	40	70			
			Group 10	63	110			
		$I_C = 1\text{ A}$	Group 16	100	170			
			Group 6	40	130	250		
			Group 10	63	110	160		
f_T	Transition Frequency	$I_C = 0.5\text{ A}$	$V_{CE} = 5\text{ V}$	50			MHz	
			C_{CBO}	Collector-base Capacitance	$I_E = 0$ $f = 1\text{ MHz}$	$V_{CB} = 10\text{ V}$	80	μs
							t_{off}	Turn-off Time
t_{on}	Turn-on Time		0.75	μs				

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

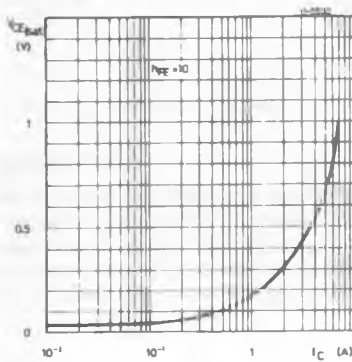
Safe Operating Areas.



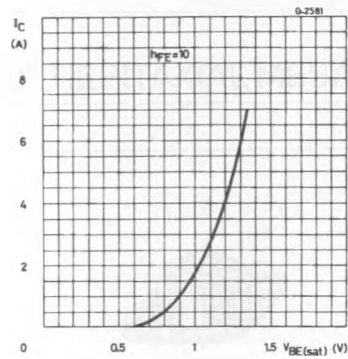
DC Current Gain.



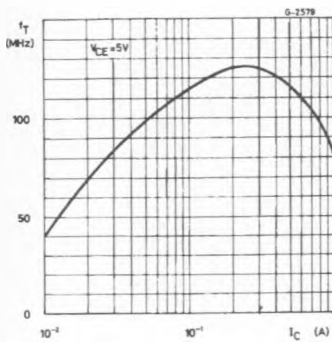
Collector-emitter Saturation Voltage.



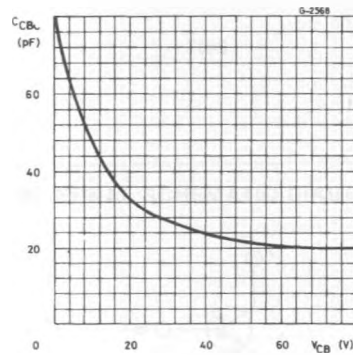
Base-emitter Saturation Voltage.



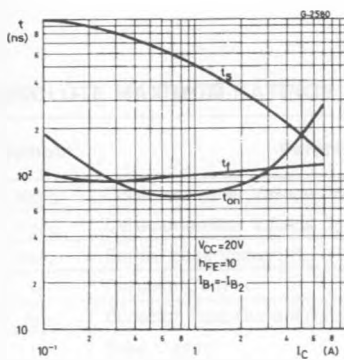
Transition Frequency.



Collector-base Capacitance.



Saturated Switching Characteristics.



Power Rating Chart.

