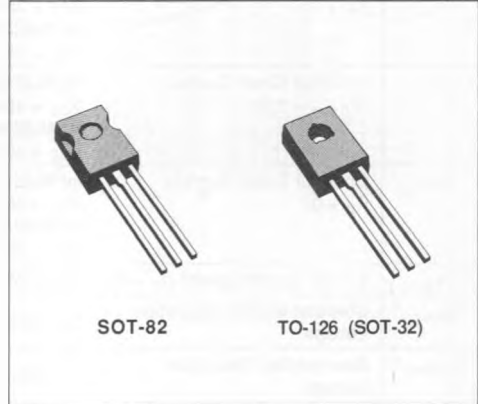


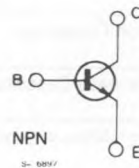
HIGH VOLTAGE TRANSISTOR

DESCRIPTION

The MJE3439, MJE3440, SGS3439 and SGS3440 are NPN silicon epitaxial planar transistors respectively in TO-126 and SOT-82 plastic package. They are designed for use in consumer and industrial line-operated applications.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		MJE3439 SGS3439	MJE3440 SGS3440	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	450	350	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	350	250	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5		V
I_C	Collector Current	0.3		A
I_B	Base Current	0.15		A
P_{Tot}	Total Power Dissipation at $T_{case} \leq 25^\circ\text{C}$	15		W
T_{stg}	Storage Temperature	- 65 to 150		$^\circ\text{C}$
T_j	Junction Temperature	150		$^\circ\text{C}$

THERMAL DATA

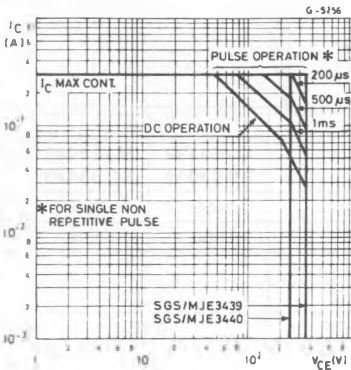
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	8.33	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

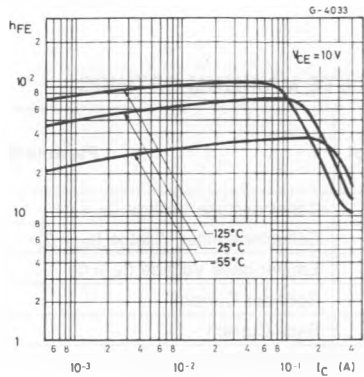
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	for MJE3439, SGS3439 $V_{CB} = 350V$ for MJE3440, SGS3440 $V_{CB} = 250V$			20	μA
I_{CEV}	Collector Cutoff Current ($V_{BE} = -1.5V$)	for MJE3439, SGS3439 $V_{CE} = 450V$ for MJE3440, SGS3440 $V_{CE} = 300V$			500	μA
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	for MJE3439, SGS3439 $V_{CE} = 300V$ for MJE3440, SGS3440 $V_{CE} = 200V$			20	μA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5V$			20	μA
$V_{CE(sat)}$ *	Collector-emitter Saturation Voltage	$I_C = 50mA$ $I_B = 4mA$			0.5	V
$V_{BE(sat)}$ *	Base-emitter Saturation Voltage	$I_C = 50mA$ $I_B = 4mA$			0.3	V
V_{BE} '	Base-emitter Voltage	$I_C = 50mA$ $V_{CE} = 10V$			0.8	V
h_{FE} *	DC Current Gain	$I_C = 2mA$ $V_{CE} = 10V$ $I_C = 20mA$ $V_{CE} = 10V$	30		200	
h_{fe}	Small Signal Current Gain	$I_C = 5mA$ $V_{CE} = 10V$ $f = 1KHz$	25			
f_T	Transition Frequency	$I_C = 10mA$ $V_{CE} = 10V$ $f = 5MHz$	15			MHz
C_{CBO} *	Collector-base Capacitance	$V_{CB} = 10V$ $I_E = 0$ $f = 1MHz$			10	pF

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

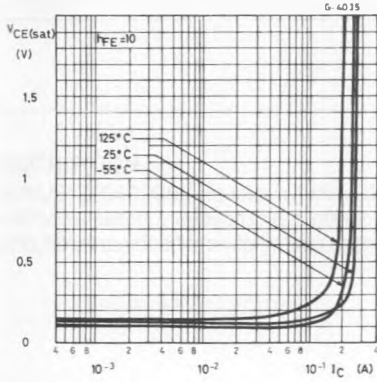
Safe Operating Areas.



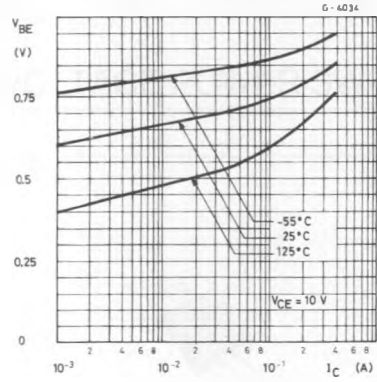
DC Current Gain.



Collector-emitter Saturation Voltage.



Base-emitter Voltage.



Transition Frequency.

