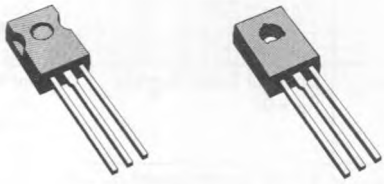
SGS-THOMSON MICROELECTRONICS

MJE3439-SGS3439
MJE3440-SGS3440

HIGH VOLTAGE TRANSISTOR

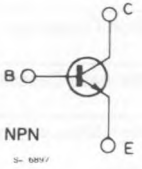
DESCRIPTION

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.



SOT-82 TO-126 (SOT-32)

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 $T_{case} \leq 25°C$	15		W
T_{stg}	Storage Temperature	– 65 to 150		°C
T_j	Junction Temperature	150		°C

THERMAL DATA

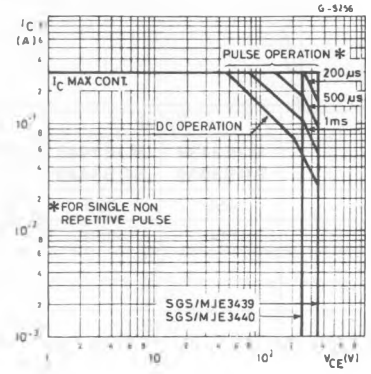
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	8.33	°C/W

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

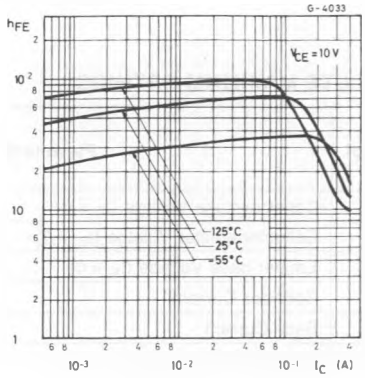
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current (I_E = 0)	for **MJE3439, SGS3439** V_{CB} = 350V for **MJE3440, SGS3440** V_{CB} = 250V			20 20	µA µA
I_{CEV}	Collector Cutoff Current (V_{BE} = − 1.5V)	for **MJE3439, SGS3439** V_{CE} = 450V for **MJE3440, SGS3440** V_{CE} = 300V			500 500	µA µA
I_{CEO}	Collector Cutoff Current (I_B = 0)	for **MJE3439, SGS3439** V_{CE} = 300V for **MJE3440, SGS3440** V_{CE} = 200V			20 50	µA 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 50		 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 = 300µs, duty cycle ≤ 1.5%.

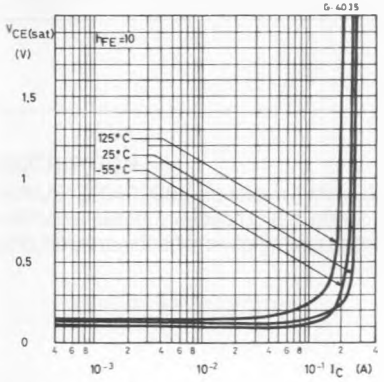
Safe Operating Areas.



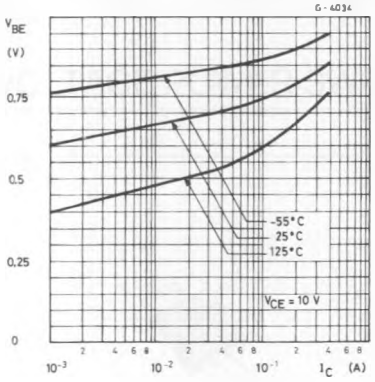
DC Current Gain.



Collector-emitter Saturation Voltage.



Base-emitter Voltage.



Transition Frequency.