SGS-THOMSON MICROELECTRONICS

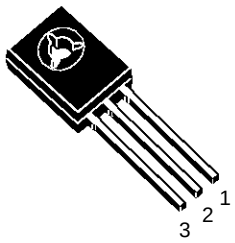
MJE3440

SILICON NPN TRANSISTOR

- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

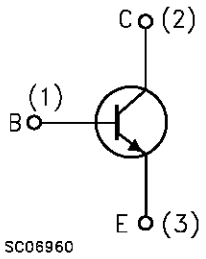
DESCRIPTION

The MJE3440 is a NPN silicon epitaxial planar transistors in SOT-32 plastic package. It is designed for use in consumer and industrial line-operated applications.



SOT-32

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage (I_E = 0)	350	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	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 Tcase $\leq$ 25 ^oC	15	W
T_{stg}	Storage Temperature	-65 to +150	^oC
T_j	Max. Operating Junction Temperature	150	^oC

THERMAL DATA

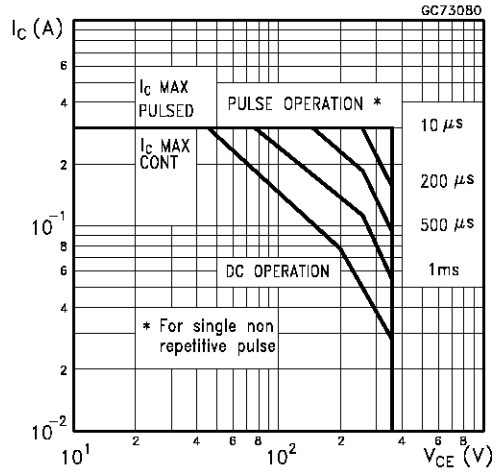
$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	8.33	$^oC/W$

ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

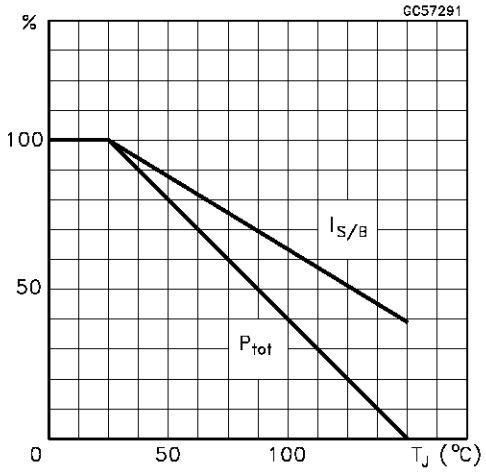
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CB} = 250 V				20	µA
I_{CEV}	Collector Cut-off Current (V_{BE} = -1.5V)	V_{CE} = 300 V				500	µA
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 200 V				50	µA
I_{EBO}	Emitter Cut-off Current (I_C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

* Pulsed: Pulse duration = 300µs, duty cycle ≤ 1.5 %

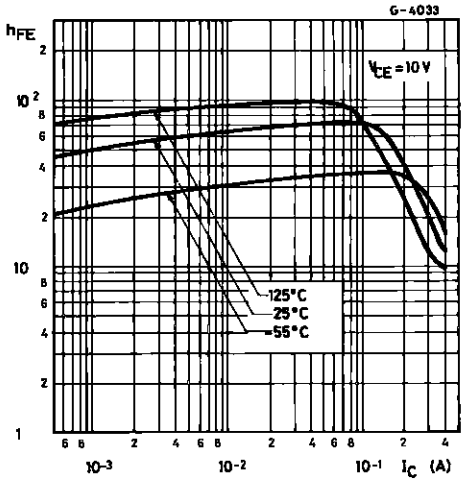
Safe Operating Area



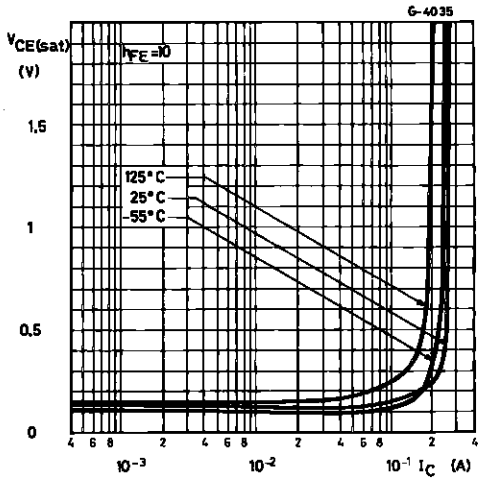
Derating Curve



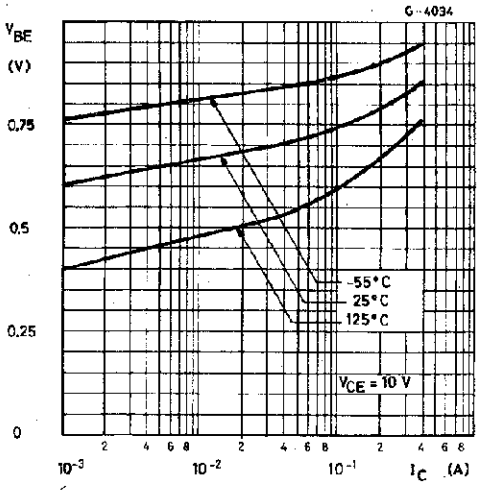
DC Current Gain



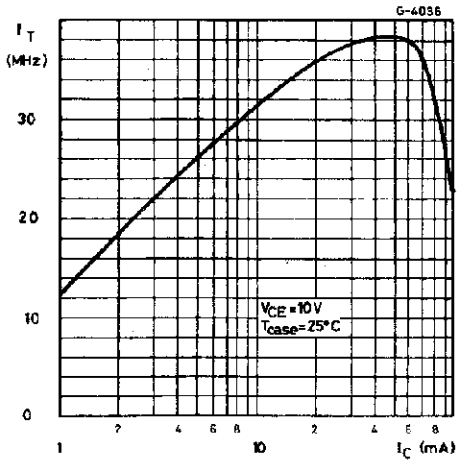
Collector-emitter Saturation Voltage



Base-emitter Voltage

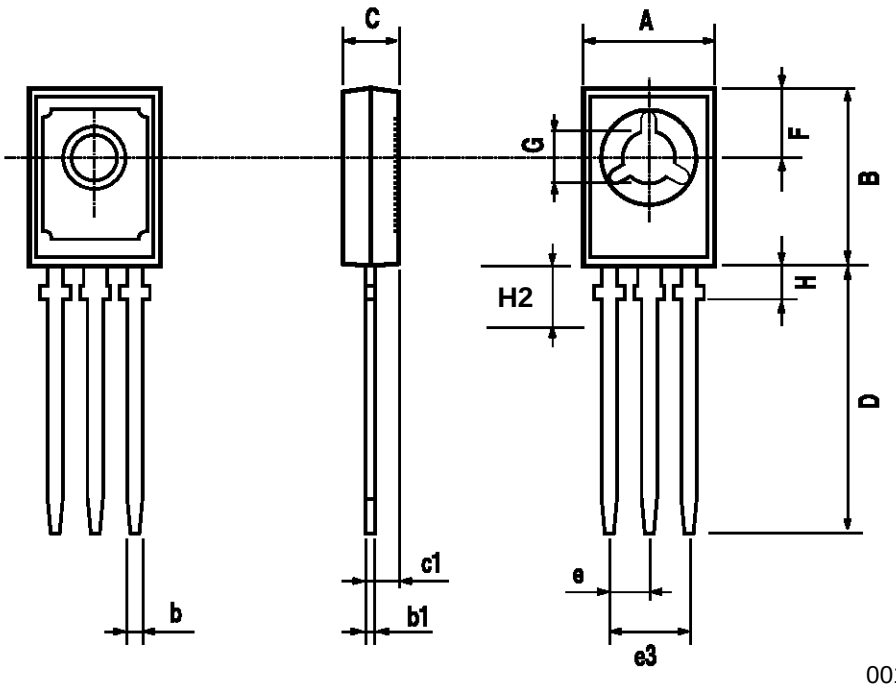


Transition Frequency



SOT-32 (TO-126) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.040		0.106
c1	1.0		1.3	0.039		0.050
D	15.4		16.0	0.606		0.629
e		2.2			0.087	
e3	4.15		4.65	0.163		0.183
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100
H2		2.15			0.084	



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