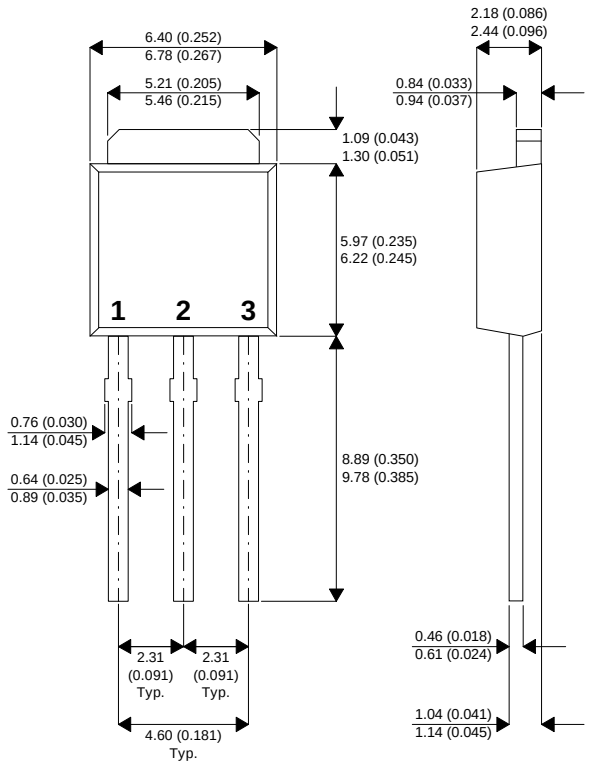
BUL62A

ADVANCED
DISTRIBUTED BASE DESIGN
HIGH VOLTAGE
HIGH SPEED NPN
SILICON POWER TRANSISTOR

Designed for use in electronic ballast applications

MECHANICAL DATA
Dimensions in mm (inches)



I–PAK (TO–251)

Pin 1 – Base Pin 2 – Collector Pin 3 – Emitter

- **SEMEFAB DESIGNED AND DIFFUSED DIE**
- **HIGH VOLTAGE**
- **FAST SWITCHING**
- **HIGH ENERGY RATING**

FEATURES

- **Multi–base for efficient energy distribution across the chip resulting in significantly improved switching and energy ratings across full temperature range.**
- **Ion implant and high accuracy masking for tight control of characteristics from batch to batch.**
- **Triple Guard Rings for improved control of high voltages.**

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage	1000V
V_{CEO}	Collector – Emitter Voltage (I_B = 0)	500V
V_{EBO}	Emitter – Base Voltage (I_C = 0)	10V
I_C	Continuous Collector Current	6A
$I_{C(PK)}$	Peak Collector Current	10A
I_B	Base Current	2.5A
P_{tot}	Total Dissipation at T_{case} = 25°C	25W
T_{stg}	Operating and Storage Temperature Range	–55 to +150°C

SEME LAB

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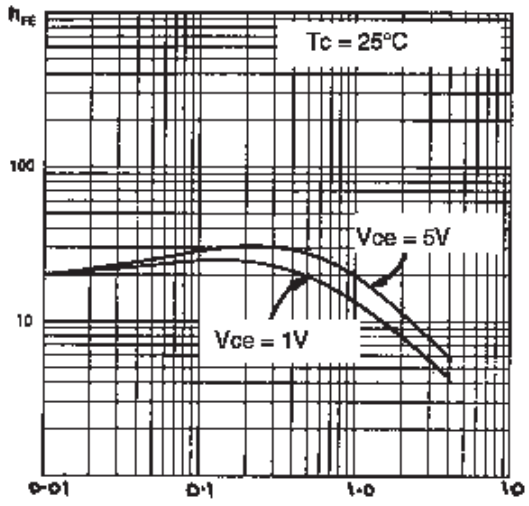
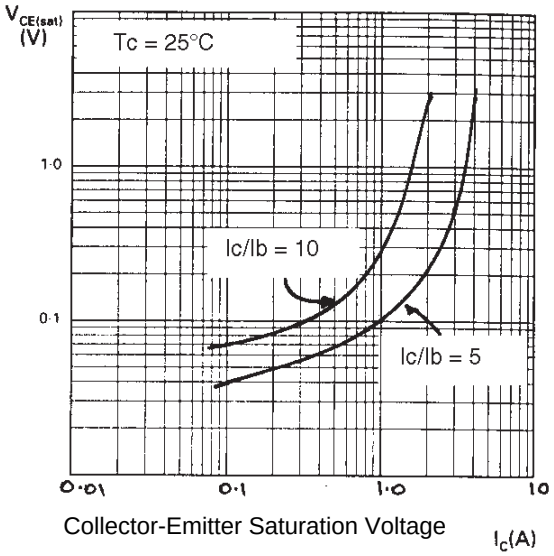
ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
	ELECTRICAL CHARACTERISTICS						
$V_{CEO(sus)}$	Collector – Emitter Sustaining Voltage	I_C = 10mA		500			V
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	I_C = 1mA		1000			V
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	I_E = 1mA		10			V
I_{CBO}	Collector – Base Cut–Off Current	V_{CB} = 1000V				10	µA
			T_C = 125°C			100	µA
I_{CEO}	Collector – Emitter Cut–Off Current	I_B = 0	V_{CE} = 500V			100	µA
I_{EBO}	Emitter Cut–Off Current	V_{EB} = 9V				10	µA
		I_C = 0	T_C = 125°C			100	µA
h_{FE*}	DC Current Gain	I_C = 0.1A	V_{CE} = 5V	18	20		—
		I_C = 1A	V_{CE} = 5V	12	15		—
		I_C = 2.5A	V_{CE} = 1V	5	9		—
			T_C = 125°C				—
$V_{CE(sat)*}$	Collector – Emitter Saturation Voltage	I_C = 100mA	I_B = 20mA		0.05	0.1	V
		I_C = 1A	I_B = 0.2A		0.1	0.3	V
		I_C = 2.5A	I_B = 0.5A		0.4	0.8	V
$V_{BE(sat)*}$	Base – Emitter Saturation Voltage	I_C = 1A	I_B = 0.2A		0.8	1.0	V
		I_C = 2.5A	I_B = 0.5A		0.9	1.2	V
	DYNAMIC CHARACTERISTICS						
f_t	Transition Frequency	I_C = 0.2A	V_{CE} = 4V		20		MHz
C_{ob}	Output Capacitance	V_{CB} = 20V	f = 1MHz		45		pF

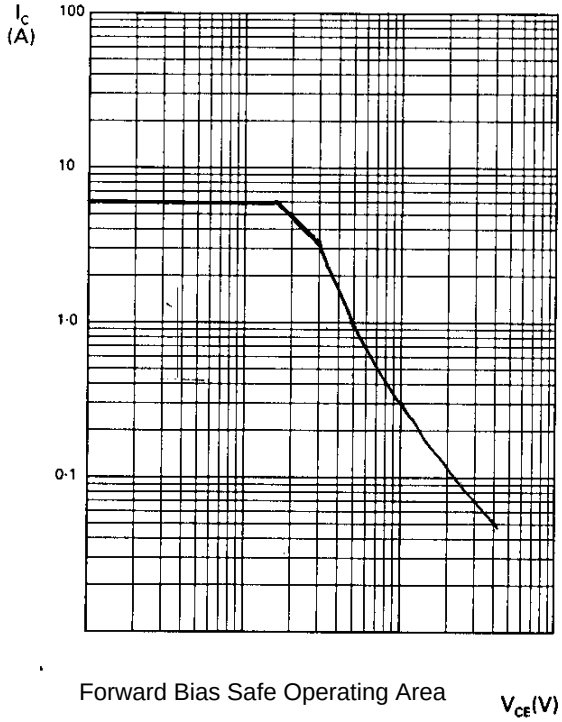
* Pulse test t_p = 300µs , δ < 2%



DC Current Gain



Collector-Emitter Saturation Voltage



Forward Bias Safe Operating Area

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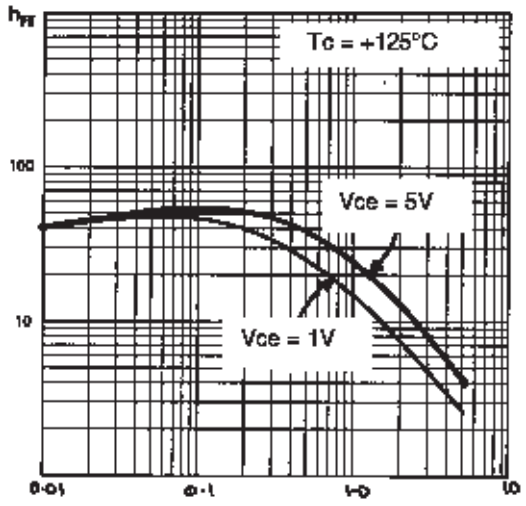
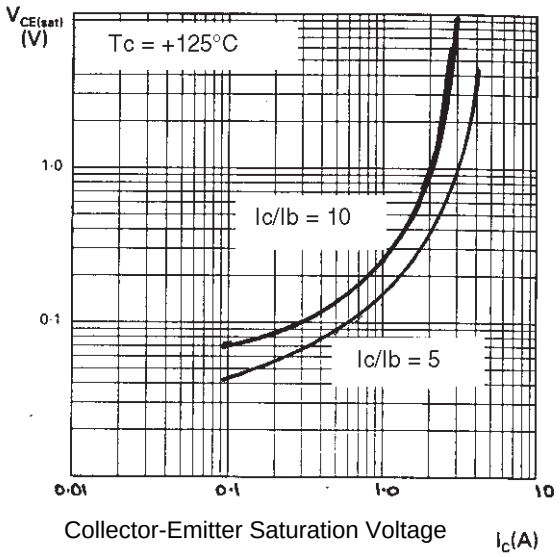
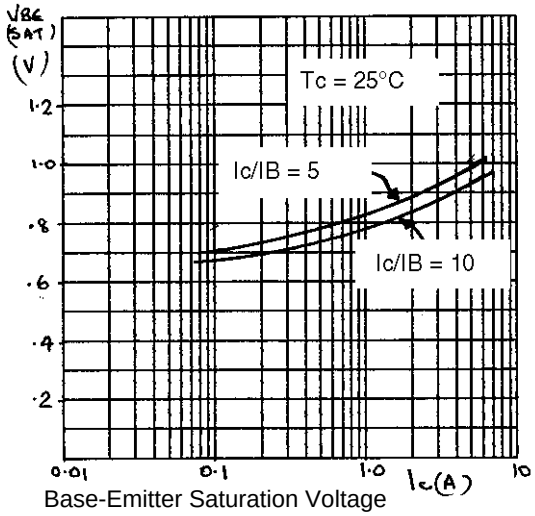


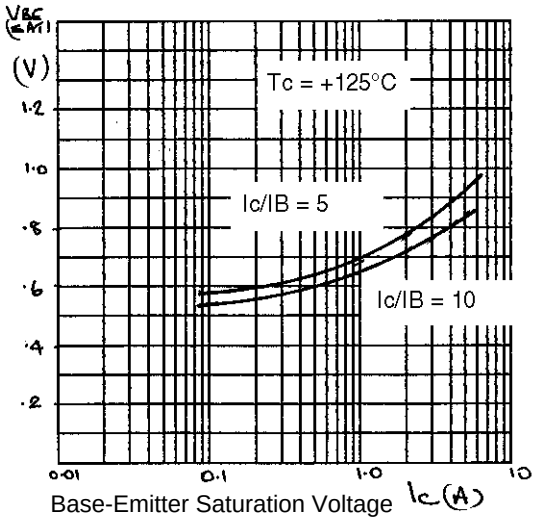
DC Current Gain



Collector-Emitter Saturation Voltage



Base-Emitter Saturation Voltage



Base-Emitter Saturation Voltage

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