

## Silicon NPN Darlington Power Transistor

## 2SD560

### DESCRIPTION

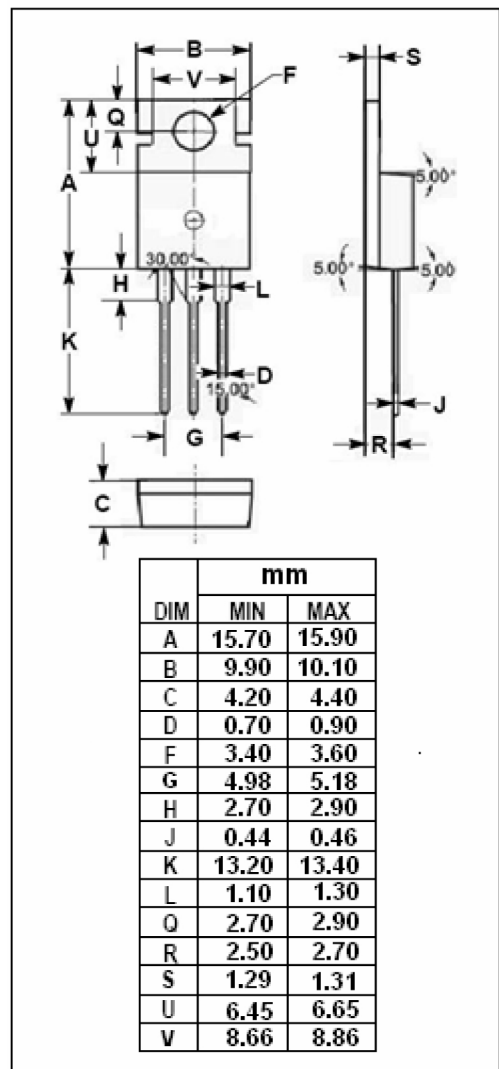
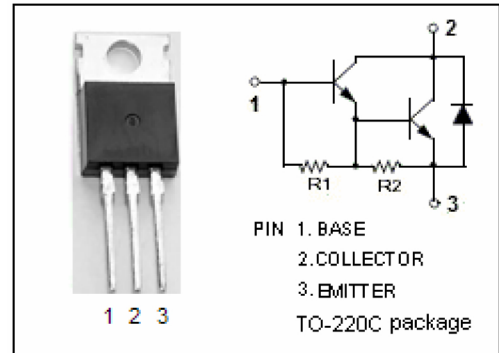
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 100V(\text{Min})$
- High DC Current Gain  
:  $h_{FE} = 2000(\text{Min}) @ I_C = 3.0A$
- Low Saturation Voltage
- Complement to Type 2SB601

### APPLICATIONS

- Designed for low frequency power amplifiers and low speed switching applications

### ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	150	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	5	A
$I_{CP}$	Collector Current-Peak	8	A
$I_B$	Base Current-Continuous	0.5	A
$P_C$	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	1.5	W
	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	30	
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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#### ELECTRICAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=3A; L=1mH, I_B=3mA$	100			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3A; I_B=3mA$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3A; I_B=3mA$			2.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=100V; I_E=0$			1	$\mu A$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5V; I_C=0$			3	mA
$h_{FE-1}$	DC Current Gain	$I_C=3A; V_{CE}=2V$	2000		15000	
$h_{FE-2}$	DC Current Gain	$I_C=5A; V_{CE}=2V$	500			

#### Switching times

$t_{on}$	Turn-on Time	$I_C=3A, I_{B1}=-I_{B2}=3mA$ $R_L=16.7\Omega; V_{CC}\approx 50V$		0.5		$\mu s$
$t_{stg}$	Storage Time			1.0		$\mu s$
$t_f$	Fall Time			1.0		$\mu s$

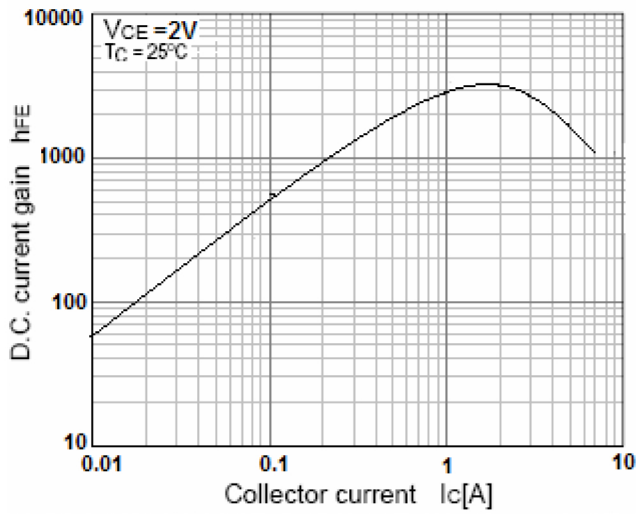
#### ◆ $h_{FE-1}$ Classifications

R	O	Y
2000-5000	3000-7000	5000-15000

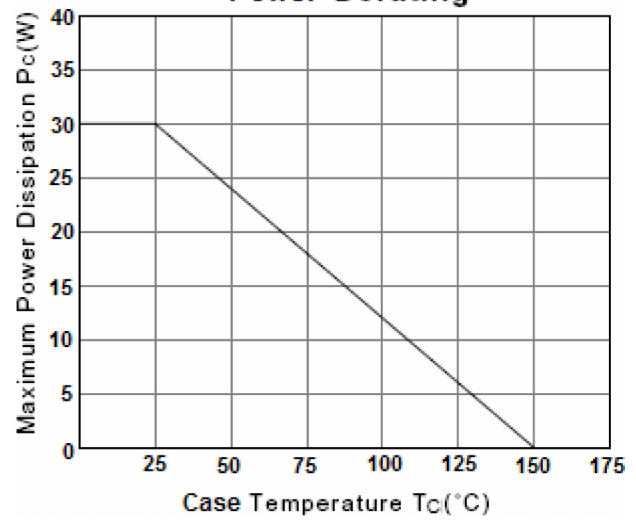
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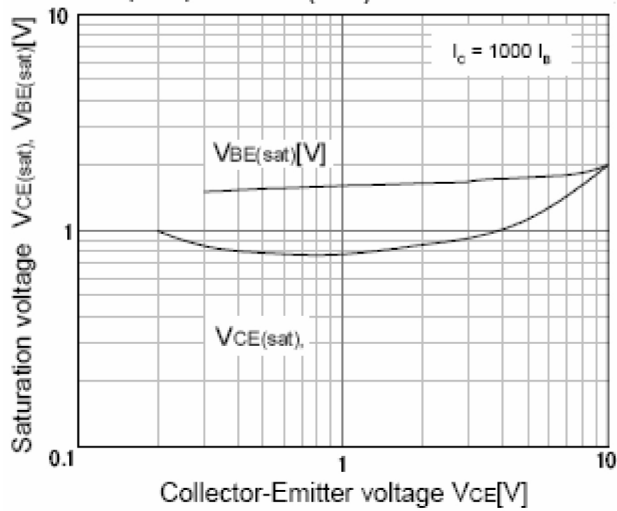
**$h_{FE}$ - $I_C$  Characteristics**



**Power Derating**



**$V_{CE(sat)}$ - $I_C$  &  $V_{BE(sat)}$ - $I_C$  Characteristics**



**Safe Operating Area**

