

**2SC5388**

## High-Voltage Switching Applications

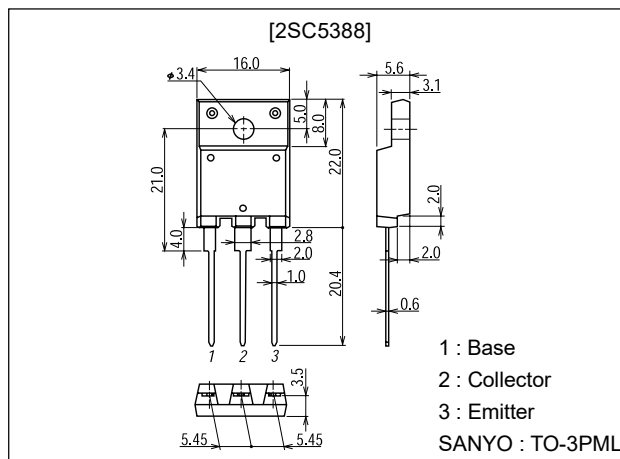
### Features

- High speed (Adoption of MBIT process).
- High breakdown voltage ( $V_{CBO}=1500V$ ).
- High reliability (Adoption of HVP process).
- On-chip damper diode.

### Package Dimensions

unit:mm

2039D



### Specifications

Absolute Maximum Ratings at  $T_a = 25^\circ C$ 

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		1500	V
Collector-to-Emitter Voltage	$V_{CEO}$		700	V
Emitter-to-Base Voltage	$V_{EBO}$		5	V
Collector Current	$I_C$		5	A
Collector Current (Pulse)	$I_{CP}$		10	A
Base Current	$I_B$		1	A
Collector Dissipation	$P_C$		3.0	W
		$T_c=25^\circ C$	50	W
Junction Temperature	$T_J$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

Electrical Characteristics at  $T_a = 25^\circ C$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=700V, I_E=0$			0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			600	mA
DC Current Gain	$h_{FE1}$	$V_{CE}=5V, I_C=1A$	100		230	
	$h_{FE2}$	$V_{CE}=5V, I_C=5A$	50		150	

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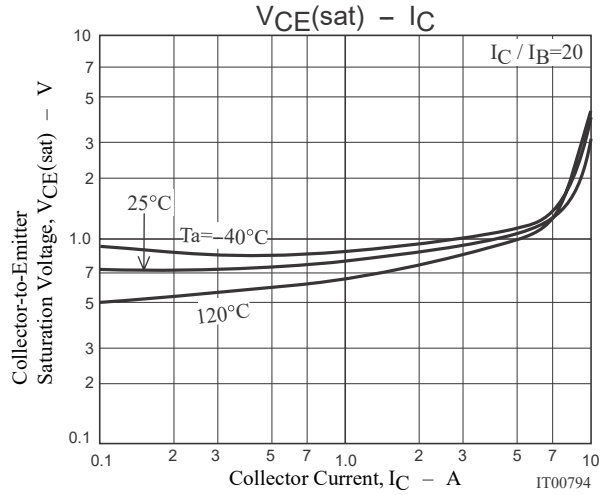
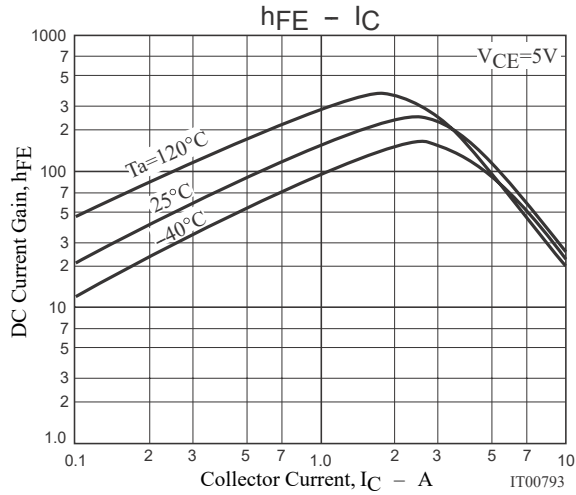
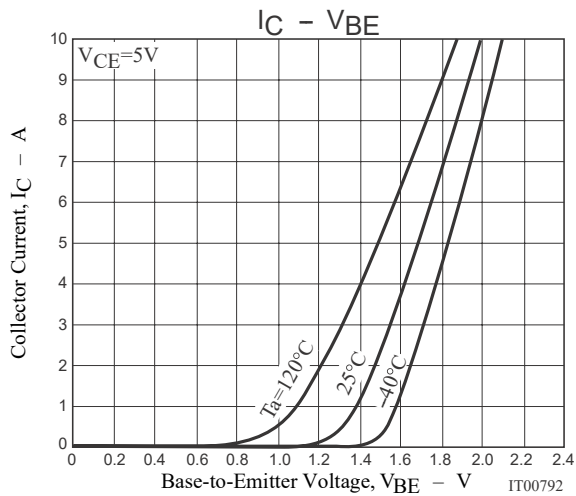
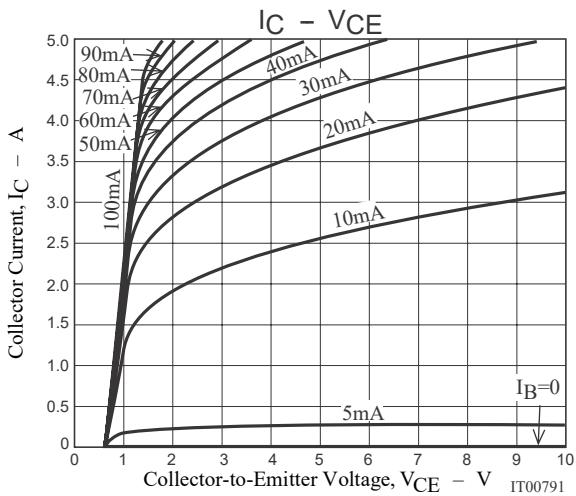
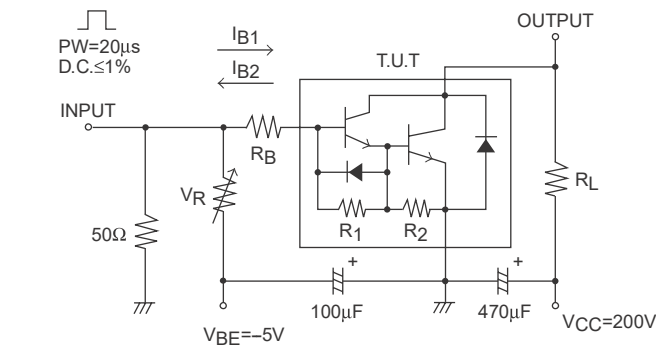
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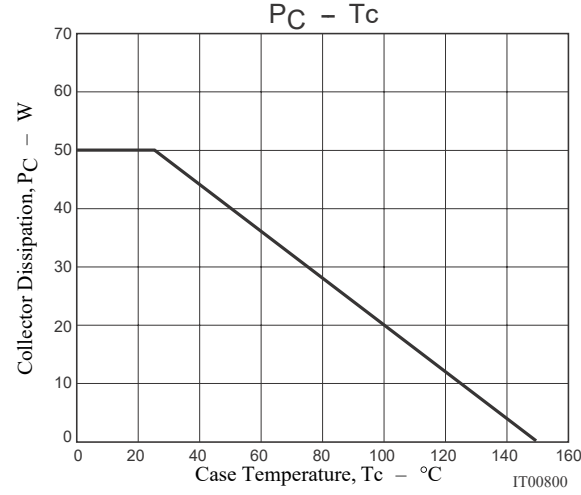
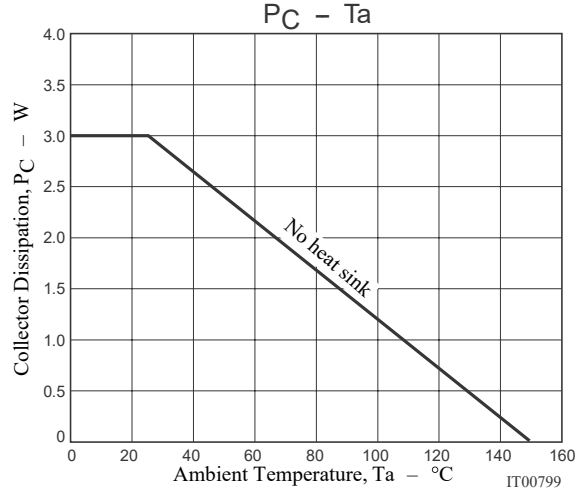
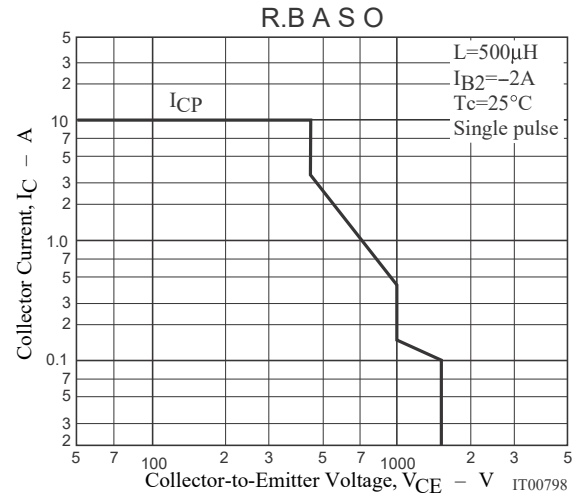
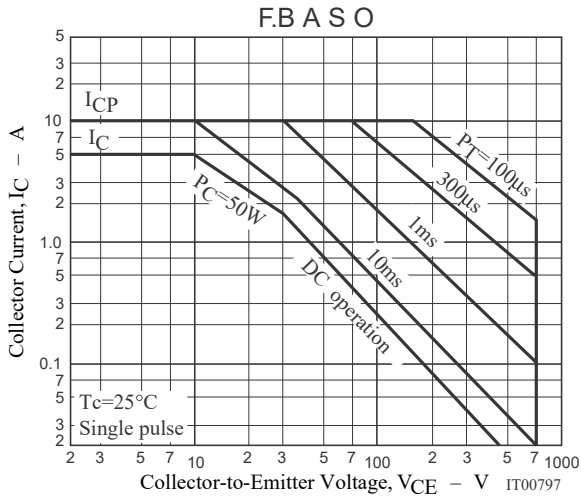
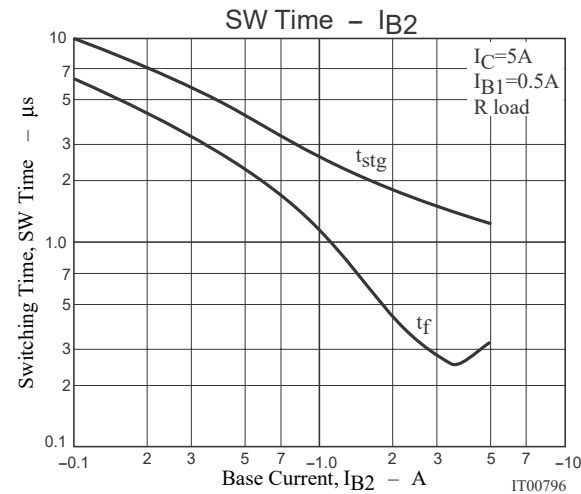
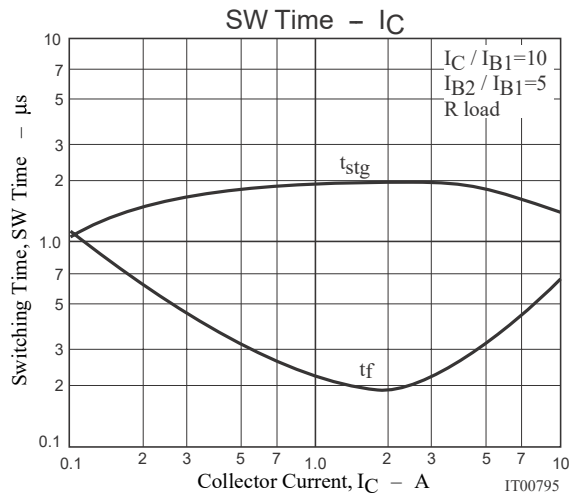
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Sustain Voltage	$V_{CEO(sus)}$	$I_C=100mA, I_B=0$	700			V
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5A, I_B=0.5A$			1.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5A, I_B=0.5A$			2.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	1500			V
Diode Forward Voltage	$V_F$	$I_{EC}=5A$			2.0	V
Fall Time	$t_f$	$I_C=5A, I_{B1}=0.5A, I_{B2}=-2.5A, V_{CC}=200V, R_L=40\Omega$			0.8	$\mu s$
Storage Time	$t_{stg}$	$I_C=5A, I_{B1}=0.5A, I_{B2}=-2.5A, V_{CC}=200V, R_L=40\Omega$			3	$\mu s$

Switching Time Test Circuit





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