

**2SD1628****High-Current Switching Applications**

An ON Semiconductor Company

**Applications**

- Strobe DC-DC converters, relay drivers, hammer drivers, lamp drivers, motor drovers.

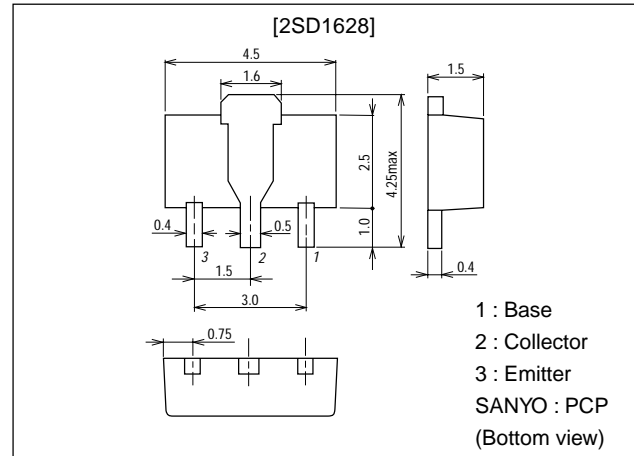
**Features**

- Low saturation voltage.
- High  $h_{FE}$ .
- Large current capacity.
- Very small size making it easy to provide high-density, small-sized hybrid IC's.

**Package Dimensions**

unit:mm

2038A

**Specifications****Absolute Maximum Ratings at  $T_a = 25^\circ\text{C}$** 

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		60	V
Collector-to-Emitter Voltage	$V_{CEO}$		20	V
Emitter-to-Base Voltage	$V_{EBO}$		6	V
Collector Current	$I_C$		5	A
Collector Current (Pulse)	$I_{CP}$		8	A
Collector Dissipation	$P_C$		500	mW
		Mounted on ceramic board (250mm <sup>2</sup> ×0.8mm)	1.5	W
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

**Electrical Characteristics at  $T_a = 25^\circ\text{C}$** 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=50\text{V}, I_E=0$			100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			100	nA
DC Current Gain	$h_{FE1}$	$V_{CE}=2\text{V}, I_C=0.5\text{A}$	120*		560*	
	$h_{FE2}$	$V_{CE}=2\text{V}, I_C=3\text{A}$	95			
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=50\text{mA}$		120		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		45		pF

\* The 2SD1628 is classified by 0.5A  $h_{FE}$  as follows :  
Marking : DK

120	E	200	160	F	320	280	G	560
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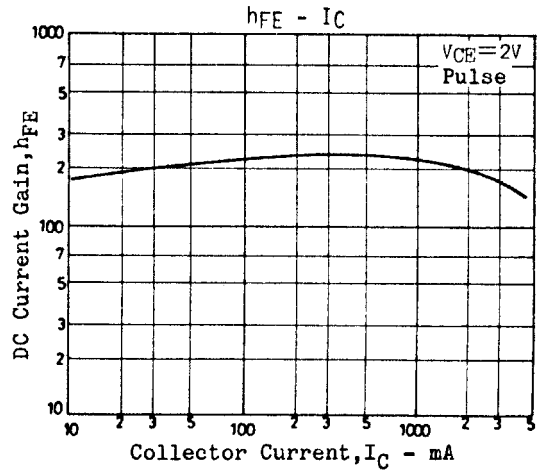
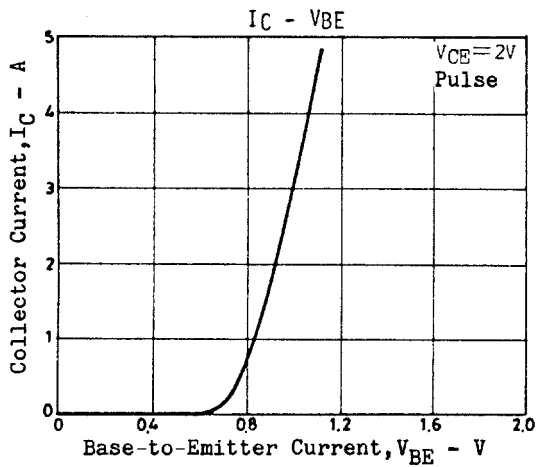
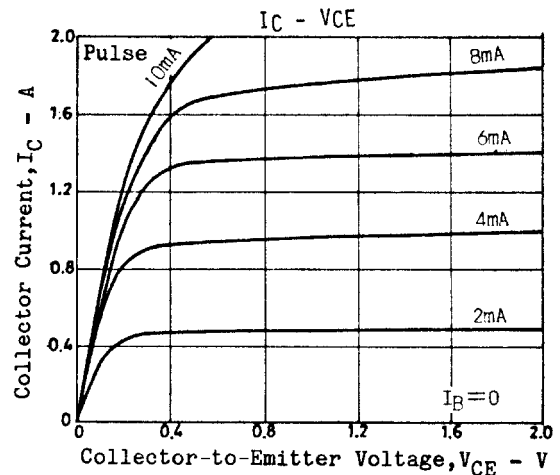
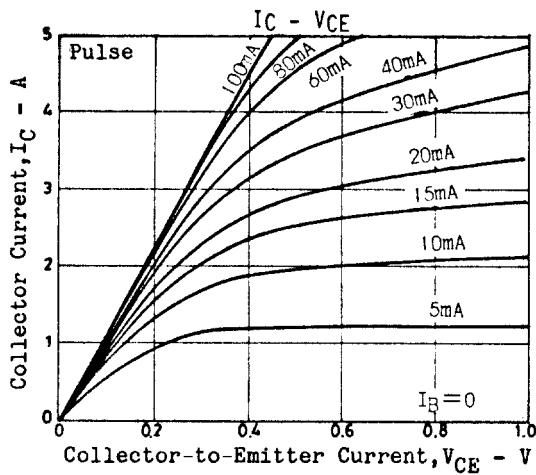
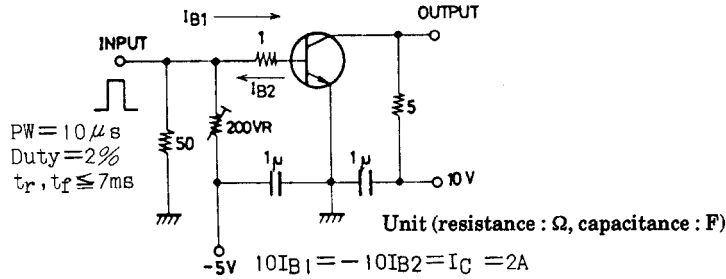
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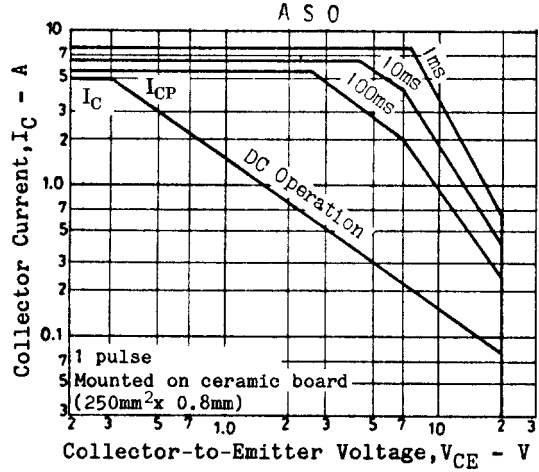
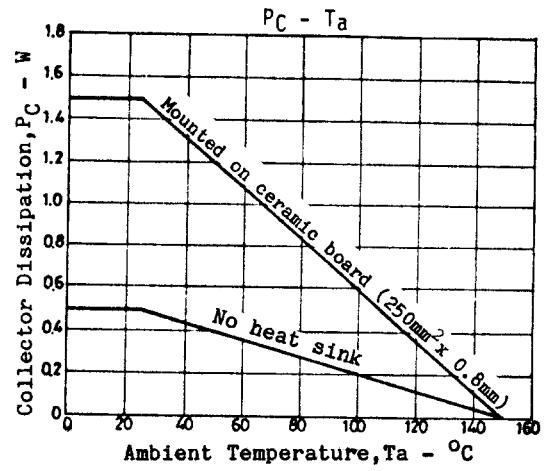
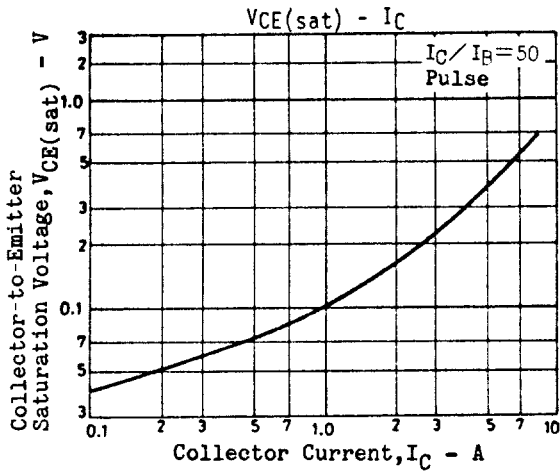
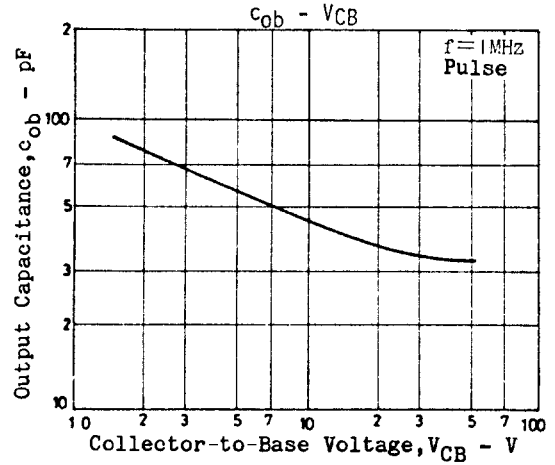
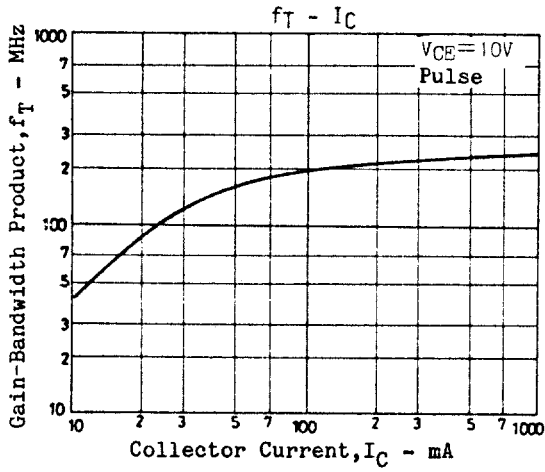
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=60mA$			500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=3A, I_B=60mA$			1.5	V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		30		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		300		ns
Fall Time	$t_f$	See specified Test Circuit.		40		ns

## Switching Time Test Circuit



# 2SD1628



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