Ordering number:EN538E

NPN Epitaxial Planar Silicon Transistor

2SD826

20V/5A Switching Applications

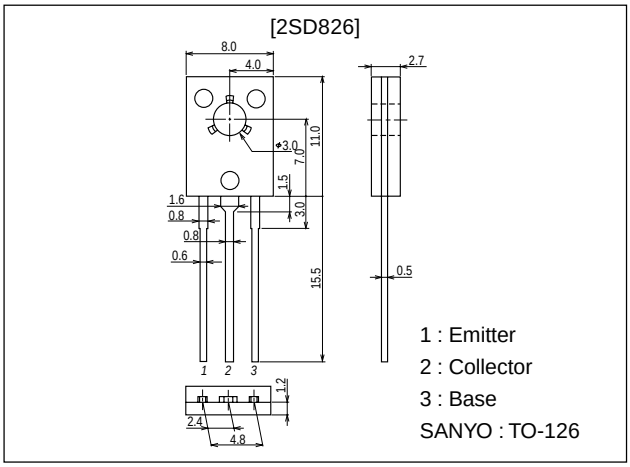
Features

- Low saturation voltage.
- High h_{FE}.
- Large current capacity.

Package Dimensions

unit:mm

2009A



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		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}	100ms, 1 pulse	8	A
Collector Dissipation	P_C		1.0	W
		Tc=25˚C	10	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=50V, I_E=0			1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			1.0	μA
DC Current Gain	$h_{FE}1$	V_{CE}=2V, I_C=0.5A	120*		560*	
	$h_{FE}2$	V_{CE}=2V, I_C=3A (Pulse)	95			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		120		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		45		pF

Continued on next page.

* : The 2SD826 is classified by 0.5A h_{FE} as follows.

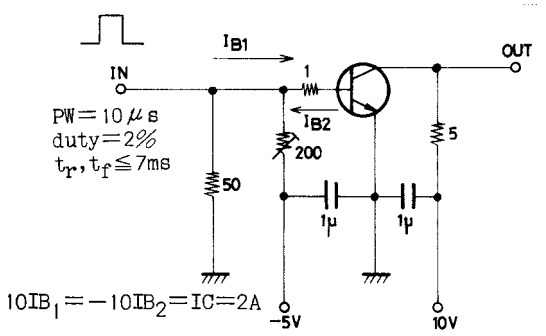
120	E	200	160	F	320	280	G	560

SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

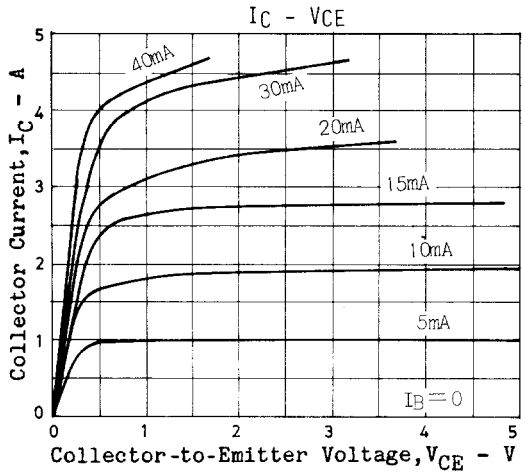
Continued from preceding page.

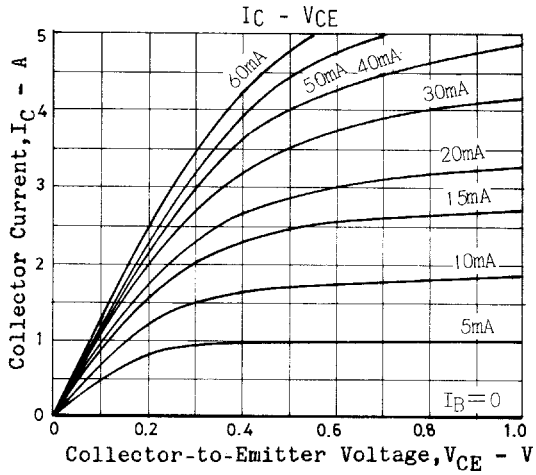
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=3A, I_B=60mA (Pulse)			0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=3A, I_B=60mA (Pulse)			1.5	V
Turn-ON Time	t_{on}	See specified test circuit.		30		ns
Storage Time	t_{stg}	See specified test circuit.		300		ns
Fall Time	t_f	See specified test circuit.		40		ns

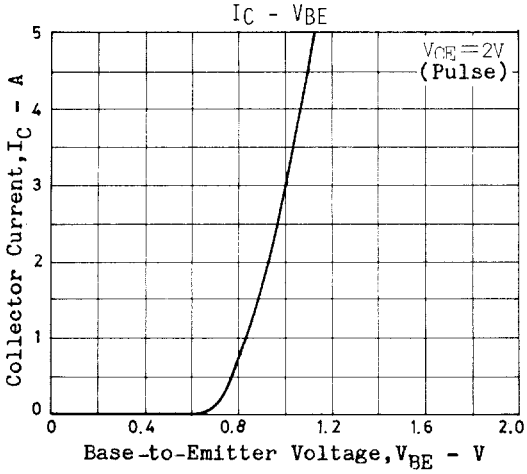
Switching Time Test Circuit

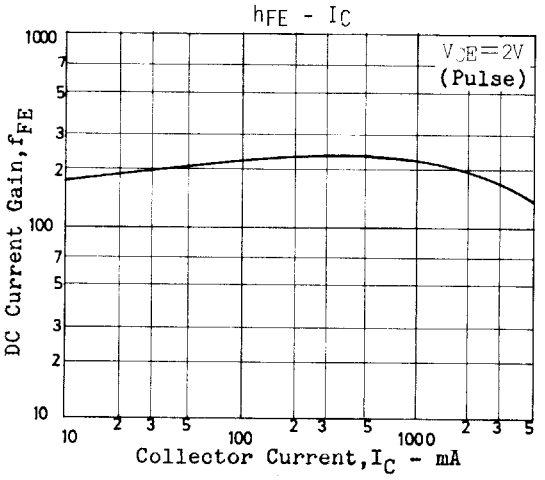


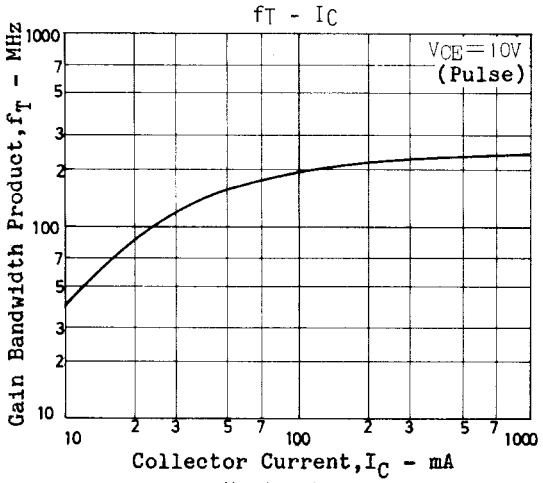
Unit (resistance : Ω, capacitance : F)

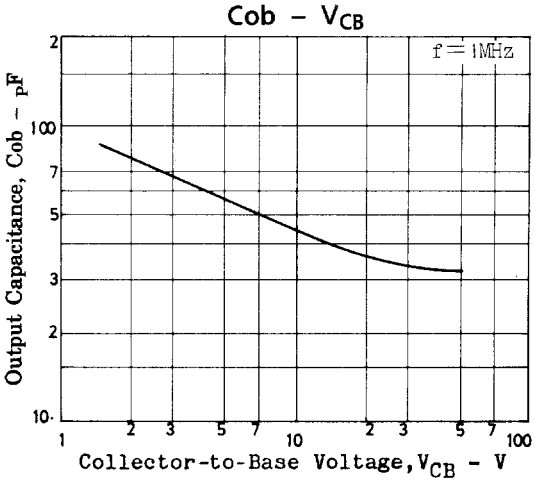


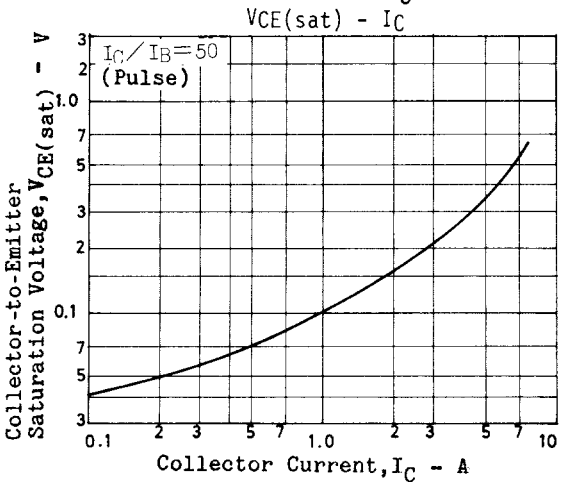


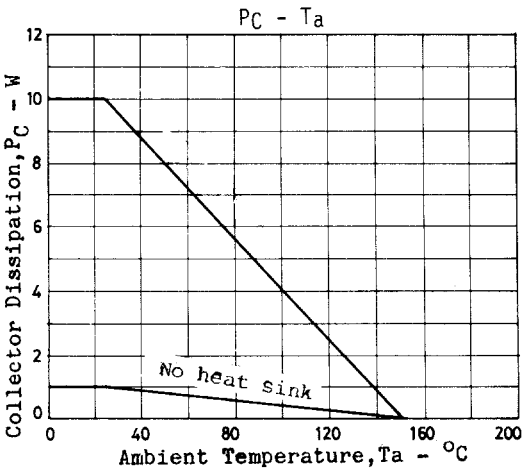


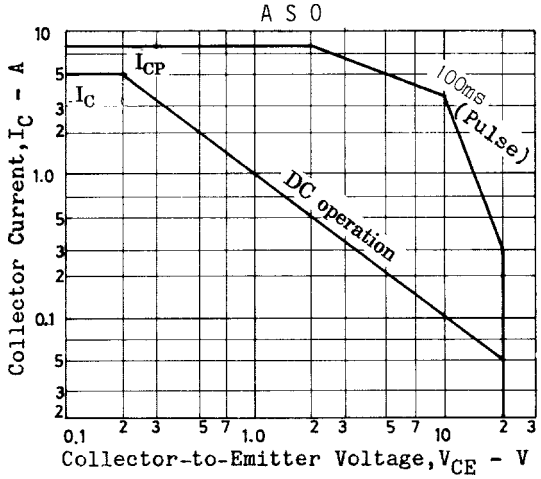




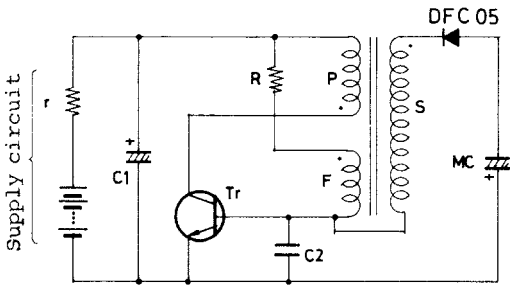




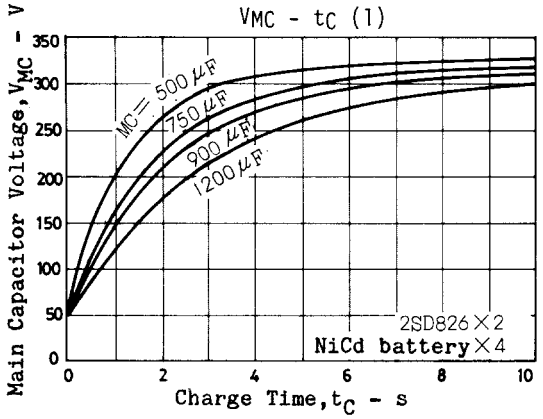


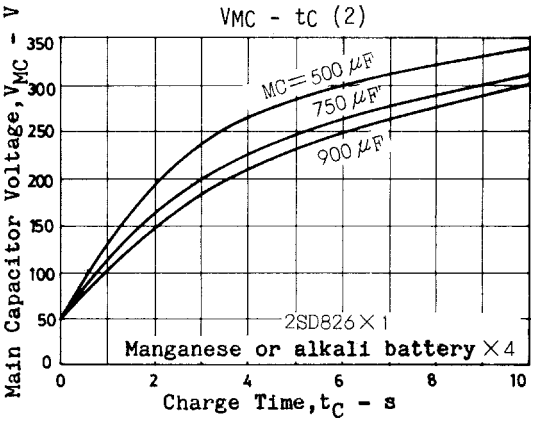


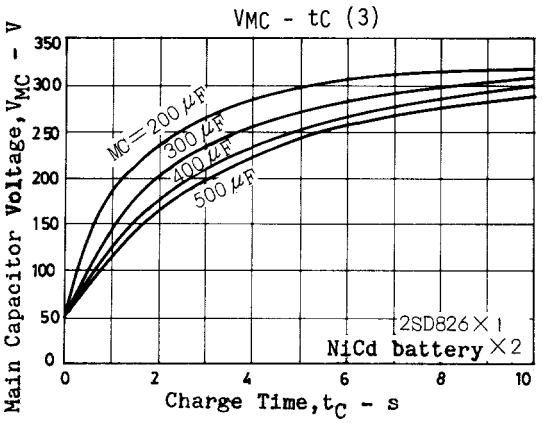
Sample Application Circuit 1 : Electronic flash set



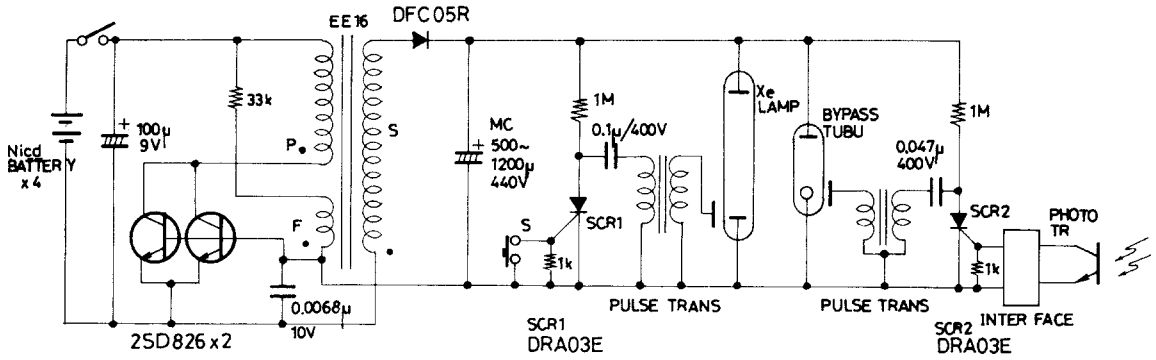
	E[V]	r[Ω]	MC[μF]	C1[μF]	R[kΩ]	C2[μF]	Tr	P	F	S	Core
NiCd ×2	2.7	0.15	to 500	100	2.2	0.01	2SD826 FG	0.55ø× $10^3/_4$T	0.23ø× $12^3/_4$T	0.07ø× 1350T	EE13
Alkali or manganese ×4	6.0	1.2	500 to 900	100	4.7	0.015	2SD826 EFG	0.6ø× $22^3/_4$T	0.23ø× $20^3/_4$T	0.08ø× 1390T	EE16
NiCd ×4	5.4	0.3	500 to 1200	100	33	0.0068	2SD826 EF×2	0.6ø× $22^3/_4$T	0.23ø× $20^3/_4$T	0.08ø× 1390T	EE16







Sample Application Circuit 2 : High-grade electronic flash set



DC/DC CONVERTER TRANS

P: 0.6 φ 22 3/4T

F: 0.23 φ 20 3/4T

S: 0.08 φ 1390T

CORE: EE16

Unit (resistance : Ω, capacitance : F)