



ON Semiconductor®

Ordering number : EN538F

ON Semiconductor DATA SHEET

2SD826 — NPN Epitaxial Planar Silicon Transistor 20V / 5A, Transistor for Flash Circuit

Features

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

Specifications

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

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
		$T_c=25^{\circ}\text{C}$	10	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}	$V_{CB}=50\text{V}$, $I_E=0\text{A}$			1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0\text{A}$			1.0	μA
DC Current Gain	h_{FE1}	$V_{CE}=2\text{V}$, $I_C=0.5\text{A}$	120*		560*	
	h_{FE2}	$V_{CE}=2\text{V}$, $I_C=3\text{A}$ (Pulse)	95			

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

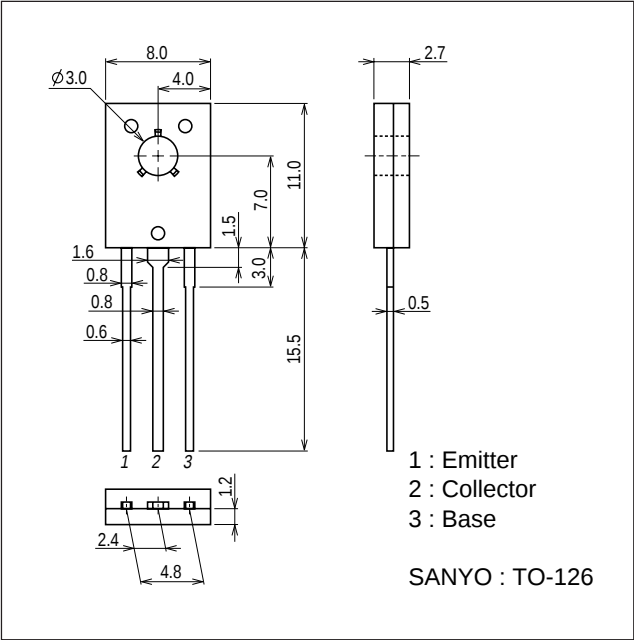
Rank	E	F	G
h_{FE}	120 to 200	160 to 320	280 to 560

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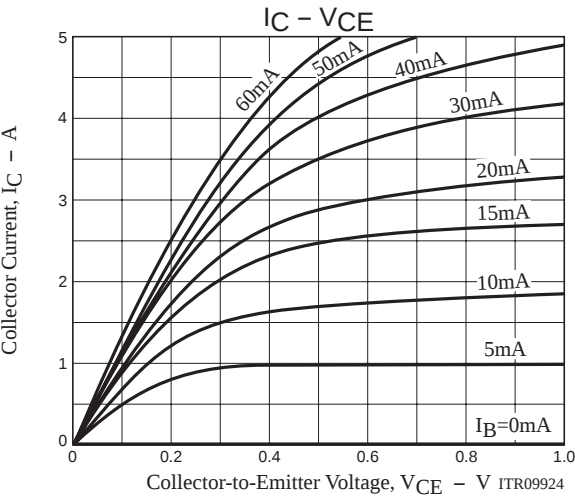
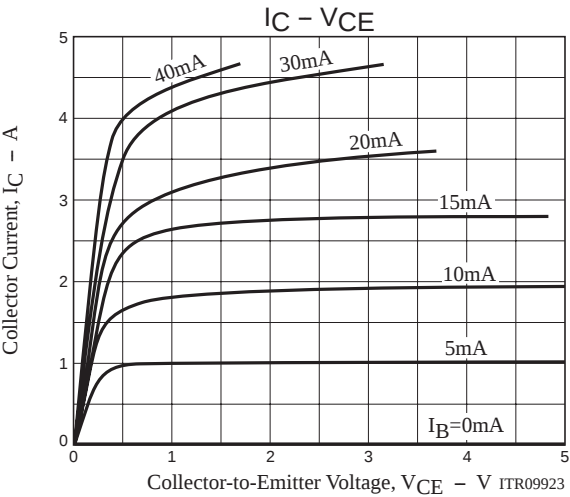
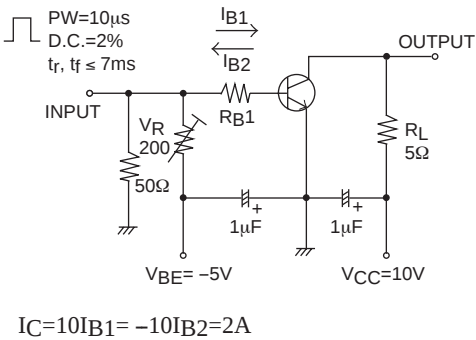
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=50mA$		120		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		45		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=60mA$ (Pulse)			0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=3A, I_B=60mA$ (Pulse)			1.5	V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Fall Time	t_f	See specified Test Circuit.		40		ns
Storage Time	t_{stg}	See specified Test Circuit.		300		ns

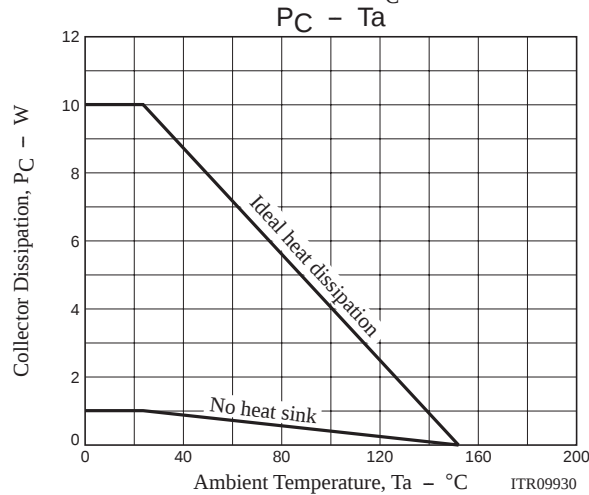
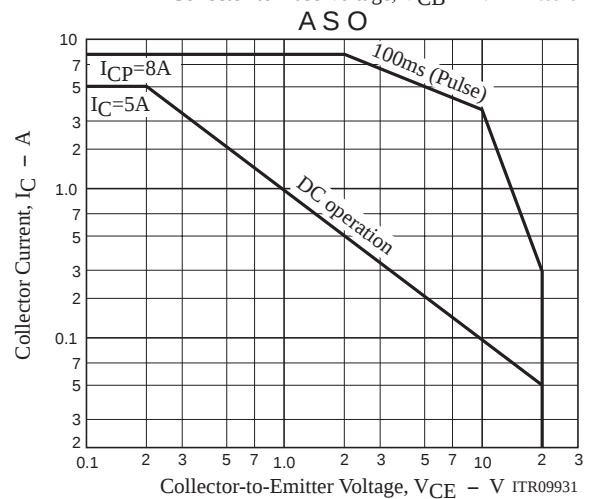
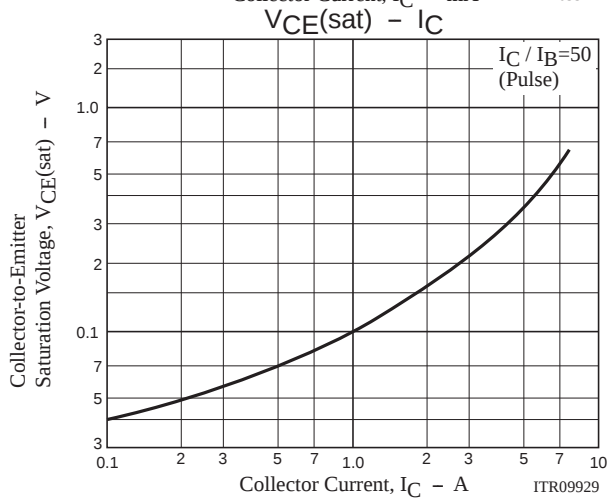
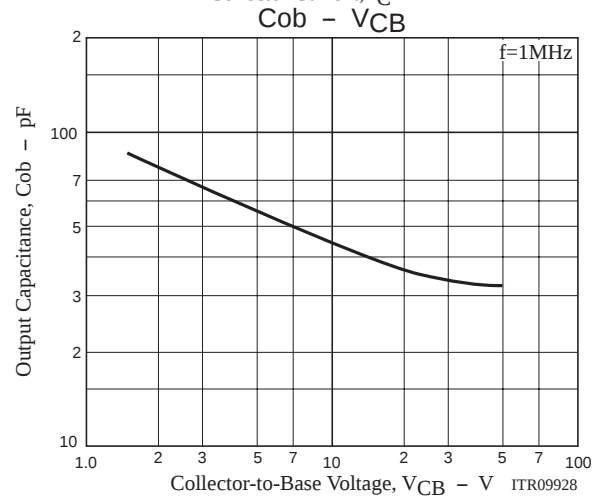
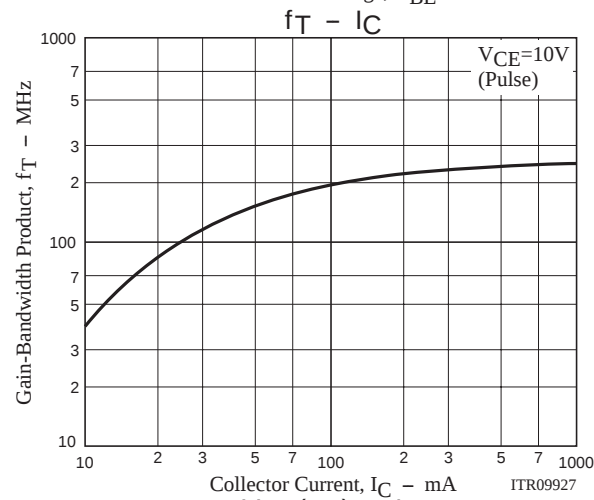
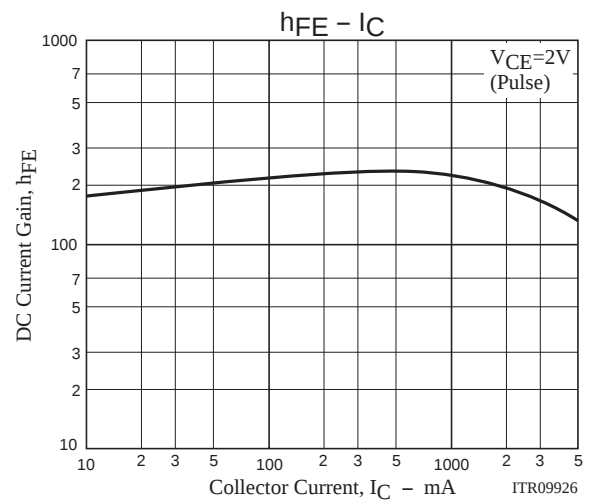
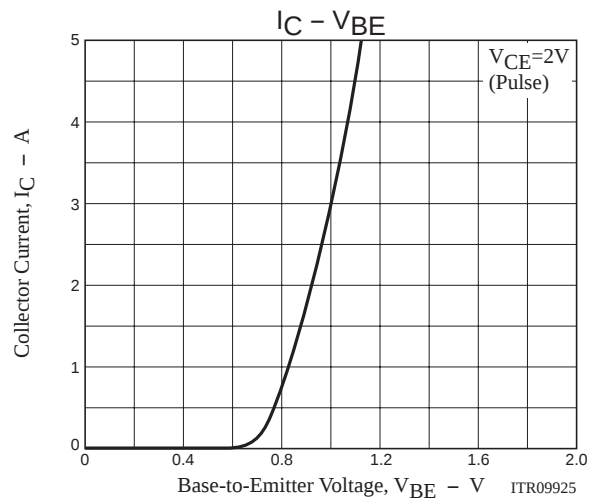
Package Dimensions

unit : mm (typ)
7515-002

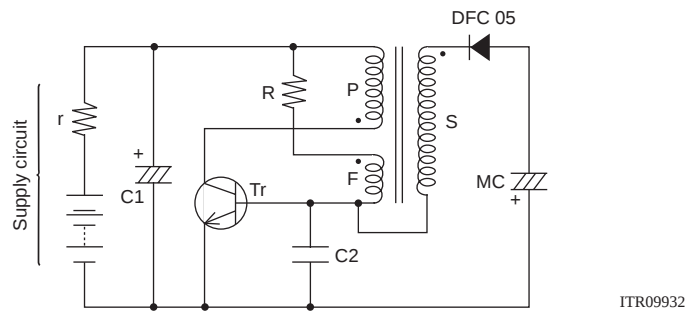


Switching Time Test Circuit

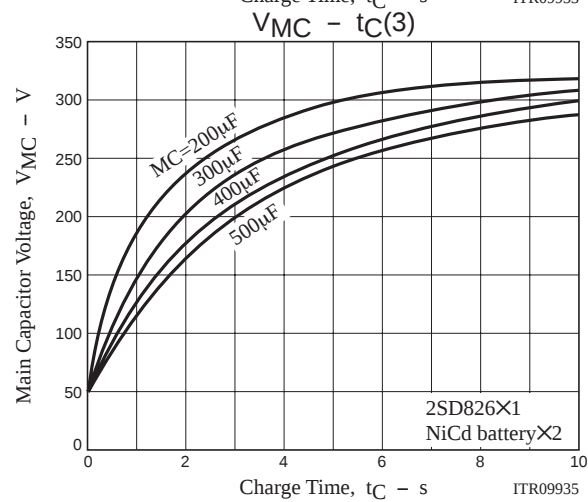
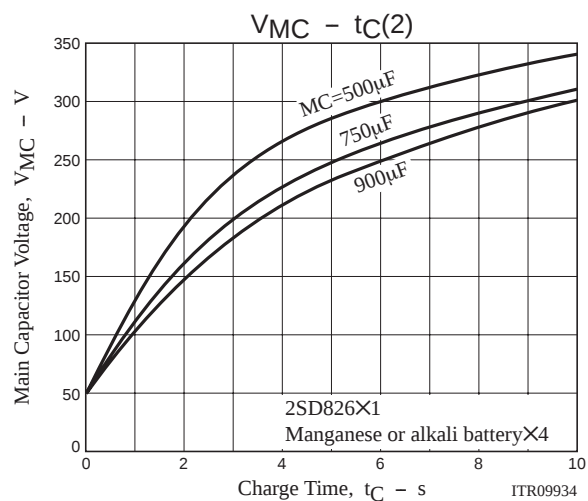
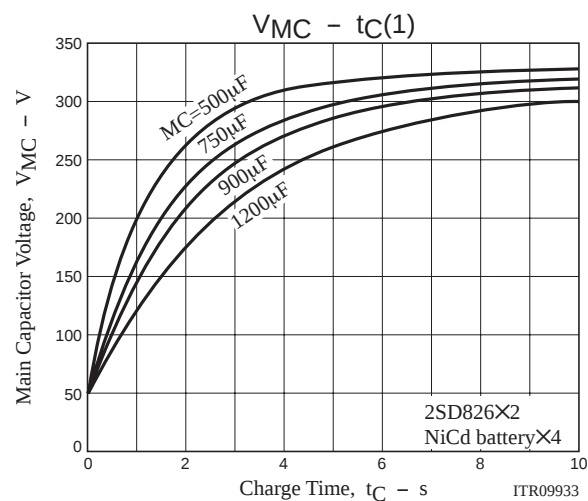




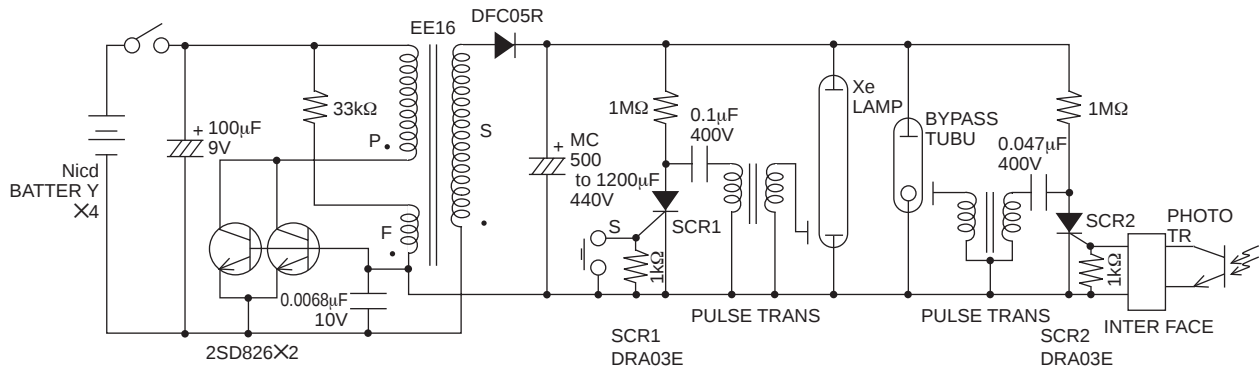
Sample Application Circuit 1 : Electronic flash set



	E[V]	r[Ω]	MC[μF]	C1[μF]	R[kΩ]	C2[μF]	Tr	P	F	S	Core
NiCdX2	2.7	0.15	to 500	100	2.2	0.01	2SD826 FG	0.55φX 10 3/4T	0.23φX 12 3/4T	0.07φX 1350T	EE13
Alkali or manganese X4	6.0	1.2	500 to 900	100	4.7	0.015	2SD826 EFG	0.6φX 22 3/4T	0.23φX 20 3/4T	0.08φX 1390T	EE16
NiCdX4	5.4	0.3	500 to 1200	100	33	0.0068	2SD826 EFX2	0.6φX 22 3/4T	0.23φX 20 3/4T	0.08φX 1390T	EE16



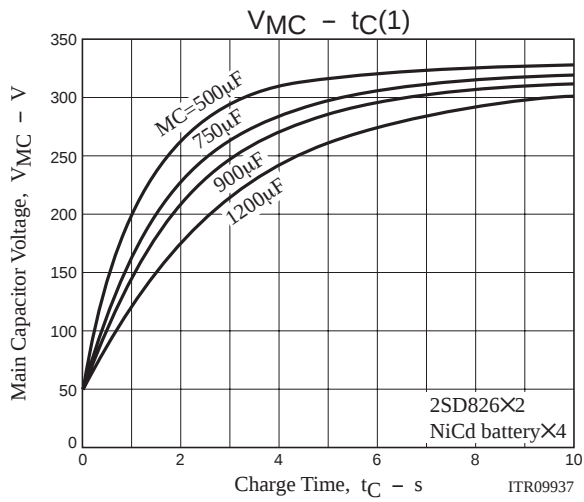
Sample Application Circuit 2 : High-grade electronic flash set



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

ITR09936



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