Ordering number:EN3399C

2SA1773 : PNP Eppitaxial Planar Silicon Transistor
2SC4616 : NPN Triple Diffused Planar Silicon Transistor

2SA1773/2SC4616

High-Voltage Driver Applications

Features

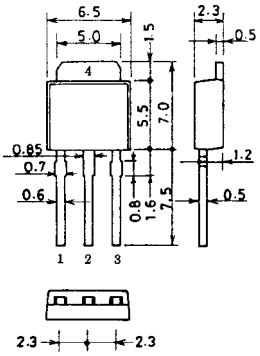
- Large current capacity (I_C=2A).
- High breakdown voltage (V_{CEO}≥400V).

Package Dimensions

unit:mm

2045A

[2SA1773/2SC4616]



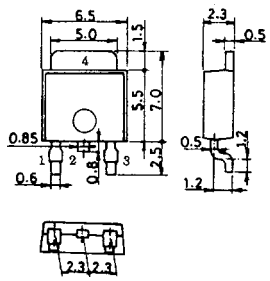
1 : Base
2 : Collector
3 : Emitter
4 : Collector

SANYO : TP

unit:mm

2044A

[2SA1773/2SC4616]



1 : Base
2 : Collector
3 : Emitter
4 : Collector

SANYO : TP-FA

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

( ) : 2SA1773

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)400	V
Collector-to-Emitter Voltage	V_{CEO}		(–)400	V
Emitter-to-Base Voltage	V_{EBO}		(–)5	V
Collector Current	I_C		(–)2	A
Colletor Current (Pulse)	I_{CP}		(–)4	A
Collector Dissipation	P_C		1	W
		Tc=25˚C	15	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

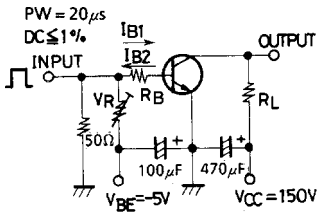
Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(–)300V, I_E=0			(–)1.0	µA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0			(–)1.0	µA
DC Current Gain	h_{FE}	V_{CE}=(–)10V, I_C=(–)100mA	40*		200*	
Gain-Bandwidth Product	f_T	V_{CE}=(–)10V, I_C=(–)100mA		(40)60		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)30V, f=1MHz		(25)15		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)500mA, I_B=(–)50mA			(–)1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)500mA, I_B=(–)50mA			(–)1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10µA, I_E=0	(–)400			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)400			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)10µA, I_C=0	(–)5			V
Turn-ON Time	t_{on}	See specified Test Circuit		(0.12)		µs
				0.085		µs
Storage Time	t_{stg}	See specified Test Circuit		(3.0)		µs
				4.0		µs
Fall Time	t_f	See specified Test Circuit		(0.3)		ns
				0.6		µs

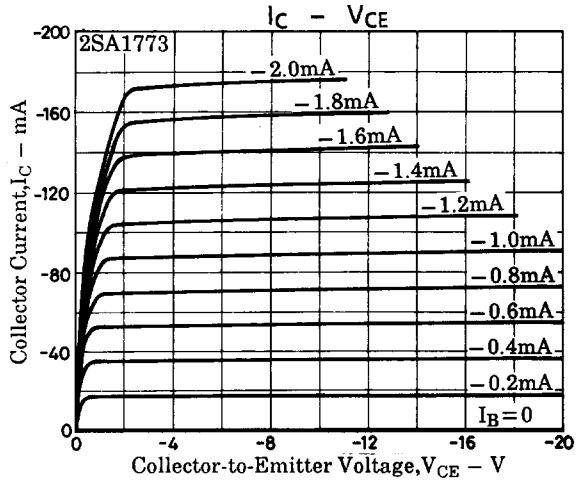
* : The 2SA1773/2SC4616 are classified by 100mA h_{FE} as follows :

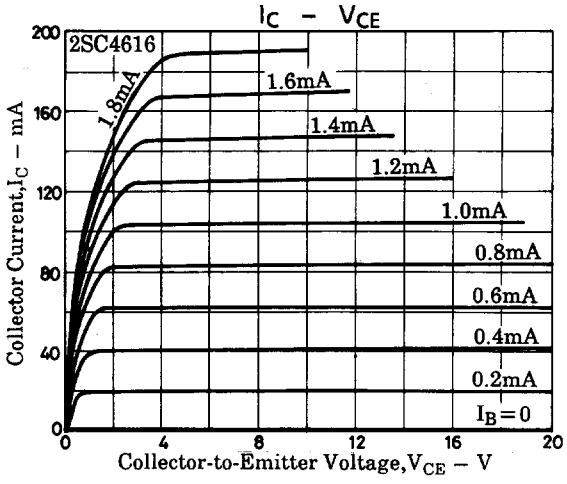
40 C 80	60 D 120	100 E 200

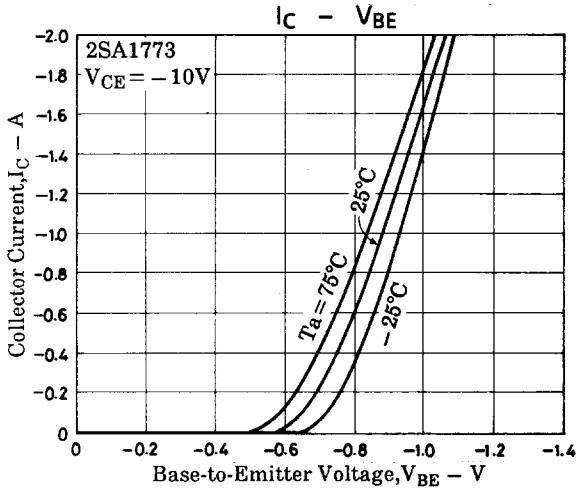
Switching Time Test Circuit

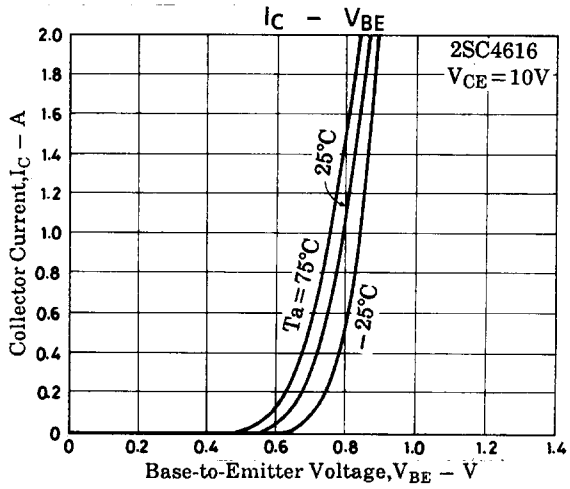


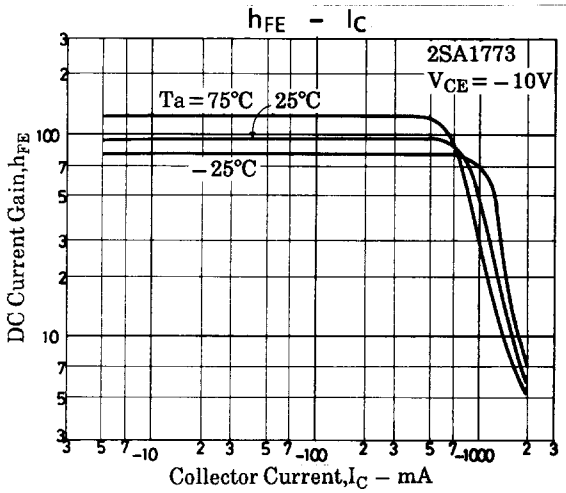
$10I_{B1} = -10I_{B2} = I_C = 500mA$
$R_L = 300\Omega$, $R_B = 20\Omega$, at $I_C = 500mA$
Unit (resistance : Ω, capacitance : F)

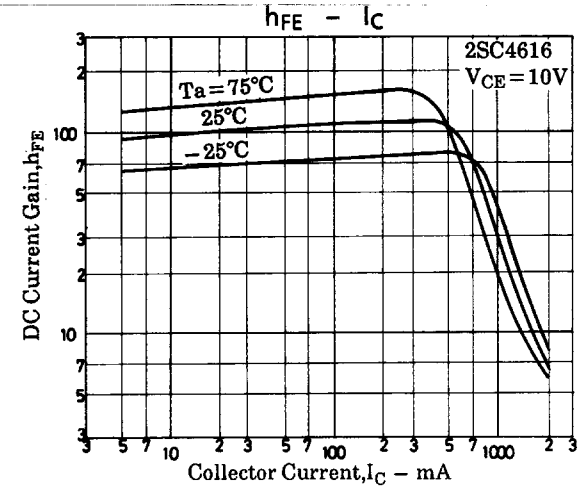

IC – VCE
2SA1773
–2.0mA
–1.8mA
–1.6mA
–1.4mA
–1.2mA
–1.0mA
–0.8mA
–0.6mA
–0.4mA
–0.2mA
IB=0
Collector Current,IC – mA
Collector-to-Emitter Voltage,VCE – V

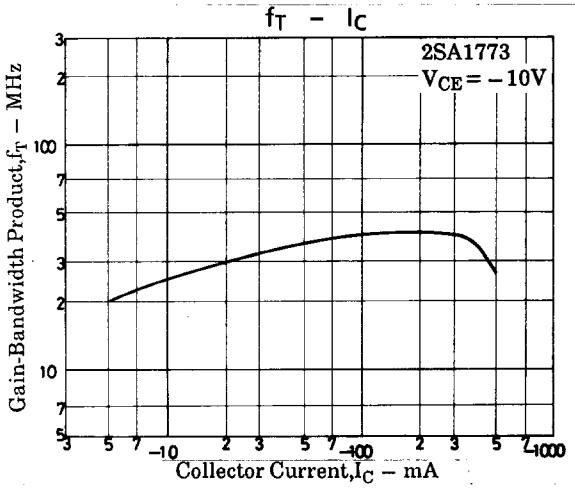

IC – VCE
2SC4616
1.8mA
1.6mA
1.4mA
1.2mA
1.0mA
0.8mA
0.6mA
0.4mA
0.2mA
IB=0
Collector Current,IC – mA
Collector-to-Emitter Voltage,VCE – V

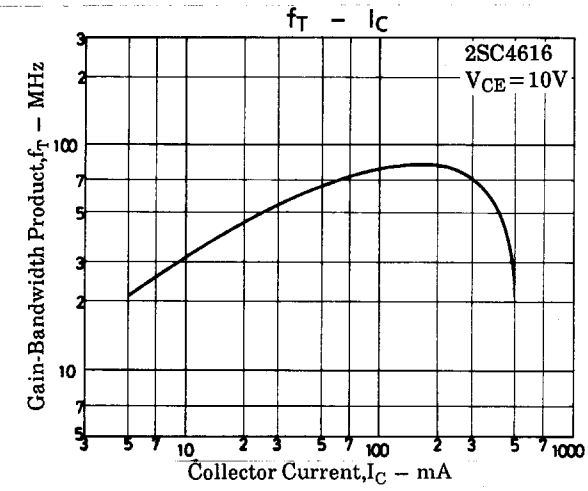

IC – VBE
2SA1773
VCE=–10V
Ta=75°C
25°C
–25°C
Collector Current,IC – A
Base-to-Emitter Voltage,VBE – V

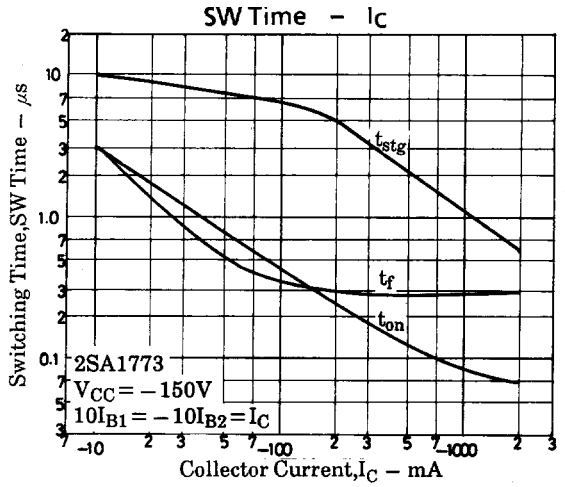

IC – VBE
2SC4616
VCE=10V
Ta=75°C
25°C
–25°C
Collector Current,IC – A
Base-to-Emitter Voltage,VBE – V

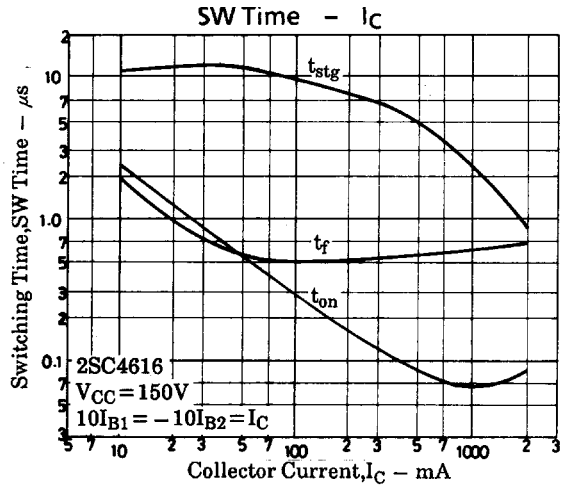

hFE – IC
2SA1773
VCE=–10V
Ta=75°C
25°C
–25°C
DC Current Gain,hFE
Collector Current,IC – mA

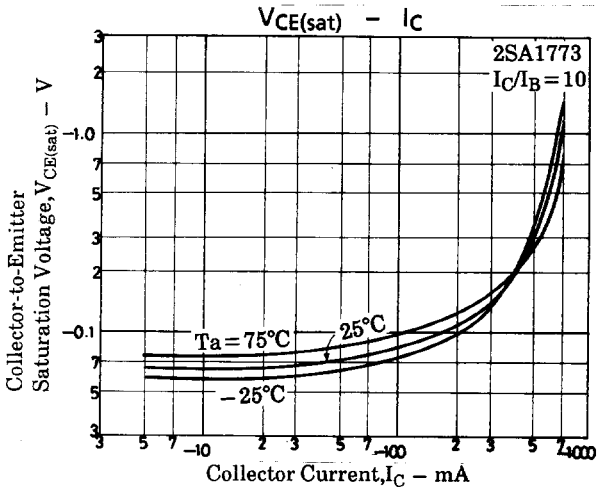

hFE – IC
2SC4616
VCE=10V
Ta=75°C
25°C
–25°C
DC Current Gain,hFE
Collector Current,IC – mA

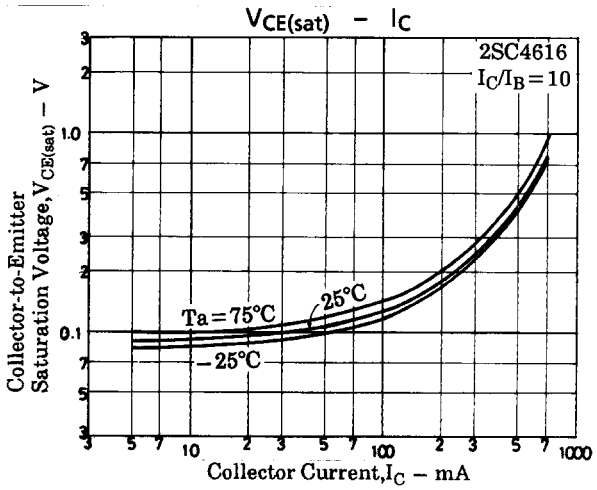

fT – IC
2SA1773
VCE=–10V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA

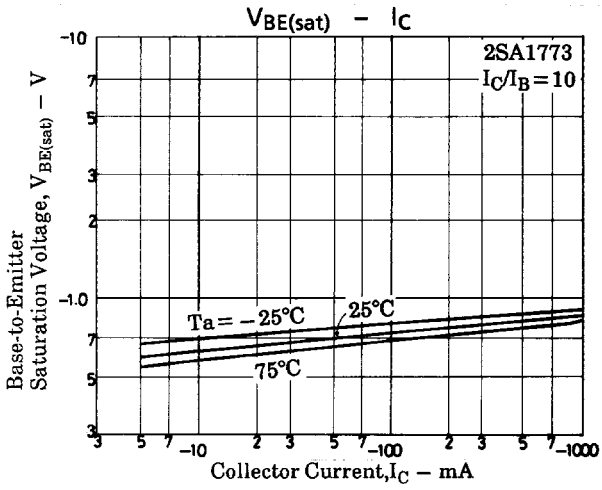

fT – IC
2SC4616
VCE=10V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA

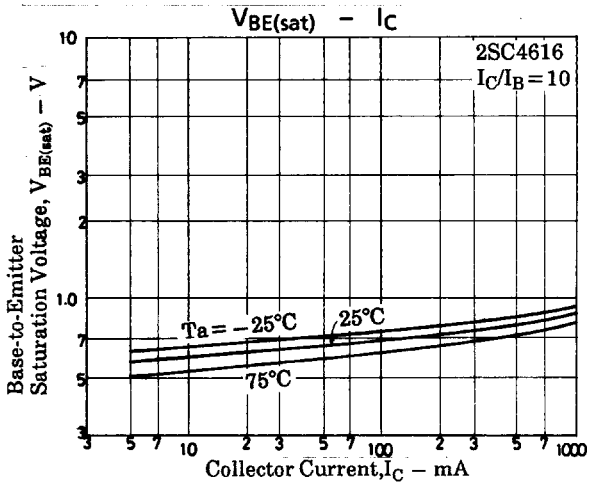

SW Time – IC
Switching Time,SW Time – μs
tstg
tf
ton
2SA1773
VCC=–150V
10IB1=–10IB2=IC
Collector Current,IC – mA

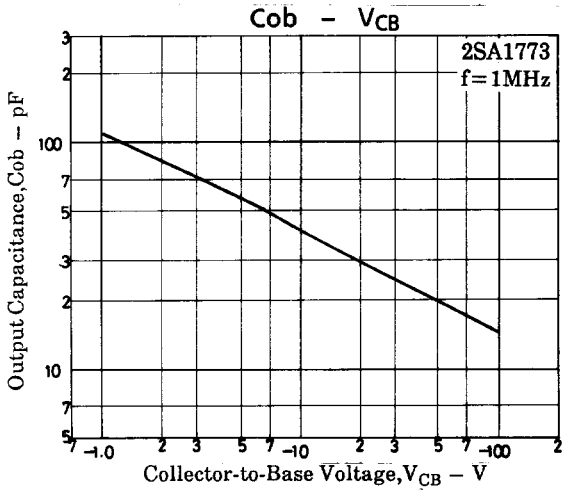

SW Time – IC
Switching Time,SW Time – μs
tstg
tf
ton
2SC4616
VCC=150V
10IB1=–10IB2=IC
Collector Current,IC – mA

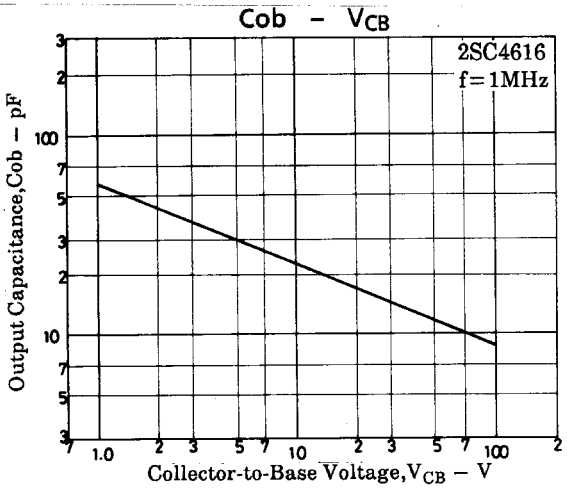

VCE(sat) – IC
Collector-to-Emitter Saturation Voltage,VCE(sat) – V
2SA1773
IC/IB=10
Ta=75°C
25°C
–25°C
Collector Current,IC – mA


VCE(sat) – IC
Collector-to-Emitter Saturation Voltage,VCE(sat) – V
2SC4616
IC/IB=10
Ta=75°C
25°C
–25°C
Collector Current,IC – mA


VBE(sat) – IC
Base-to-Emitter Saturation Voltage, VBE(sat) – V
2SA1773
IC/IB=10
Ta=–25°C
25°C
75°C
Collector Current,IC – mA


VBE(sat) – IC
Base-to-Emitter Saturation Voltage, VBE(sat) – V
2SC4616
IC/IB=10
Ta=–25°C
25°C
75°C
Collector Current,IC – mA


Cob – VCB
Output Capacitance,Cob – pF
2SA1773
f=1MHz
Collector-to-Base Voltage,VCB – V


Cob – VCB
Output Capacitance,Cob – pF
2SC4616
f=1MHz
Collector-to-Base Voltage,VCB – V