

**CPH5905**

High-Frequency Amplifier, AM Amplifier, Low-Frequency Amplifier Applications

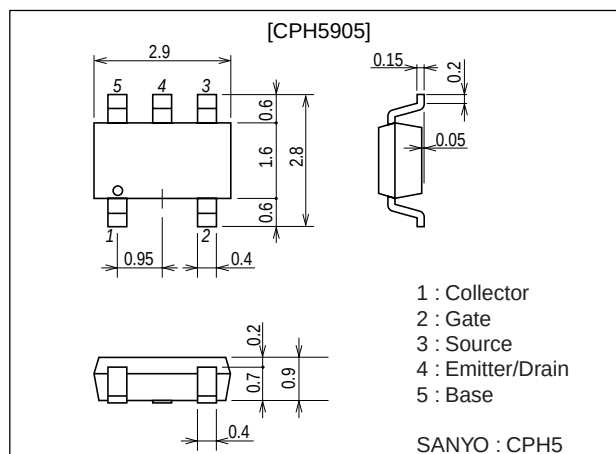
Features

- Composite type with J-FET and NPN transistors contained in the CPH5 package, improving the mounting efficiency greatly.
- The CPH5905 contains a 2SK3557-equivalent chip and a 2SC4639-equivalent chip in one package.
- Drain and emitter are shared.

Package Dimensions

unit : mm

2196



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[FET]				
Drain-to-Source Voltage	V_{DSX}		15	V
Gate-to-Drain Voltage	V_{GDS}		-15	V
Gate Current	I_G		10	mA
Drain Current	I_D		50	mA
Allowable Power Dissipation	P_D		200	mW
[TR]				
Collector-to-Base Voltage	V_{CBO}		55	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		150	mA
Collector Current (Pulse)	I_{CP}		300	mA
Base Current	I_B		30	mA
Collector Dissipation	P_C		200	mW
[Common Ratings]				
Total Dissipation	P_T		300	mW
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Marking : 1E

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Electrical Characteristics at Ta=25°C

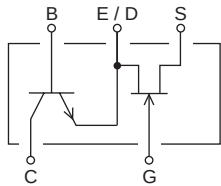
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[FET]						
Gate-to-Drain Breakdown Voltage ¹	V(BR)GDS	IG=-10μA, VDS=0	-15			V
Gate Cutoff Current	IGSS	VGS=-10V, VDS=0			-1.0	nA
Cutoff Voltage	VGS(off)	VDS=5V, ID=100μA	-0.4	-0.7	-1.5	V
Drain Current	IDSS	VDS=5V, VGS=0	10.0*		32.0*	mA
Forward Transfer Admittance	yfs	VDS=5V, VGS=0, f=1kHz	24	35		mS
Input Capacitance	Ciss	VDS=5V, VGS=0, f=1MHz		10.0		pF
Reverse Transfer Capacitance	Crss	VDS=5V, VGS=0, f=1MHz		2.9		pF
Noise Figure	NF	VDS=5V, Rg=1kΩ, ID=1mA, f=1kHz		1.0		dB
[TR]						
Collector Cutoff Current	ICBO	VCB=35V, IE=0			0.1	μA
Emitter Cutoff Current	IEBO	VEB=4V, IC=0			0.1	μA
DC Current Gain	hFE	VCE=6V, IC=1mA	135		400	
Gain-Bandwidth Product	fT	VCE=6V, IC=10mA		200		MHz
Output Capacitance	Cob	VCB=6V, f=1MHz		1.7		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=50mA, IB=5mA		0.08	0.4	V
Base-to-Emitter Saturation Voltage	VBE(sat)	IC=50mA, IB=5mA		0.8	1.0	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	IC=10μA, IE=0	55			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=1mA, RBE=∞	50			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=10μA, IC=0	6			V
Turn-ON Time	ton	See specified Test Circuit.		0.15		μs
Storage Time	tstg	See specified Test Circuit.		0.75		μs
Fall Time	tfr	See specified Test Circuit.		0.20		μs

* : The CPH5905 is classified by I_{DSS} as follows : (unit : mA)

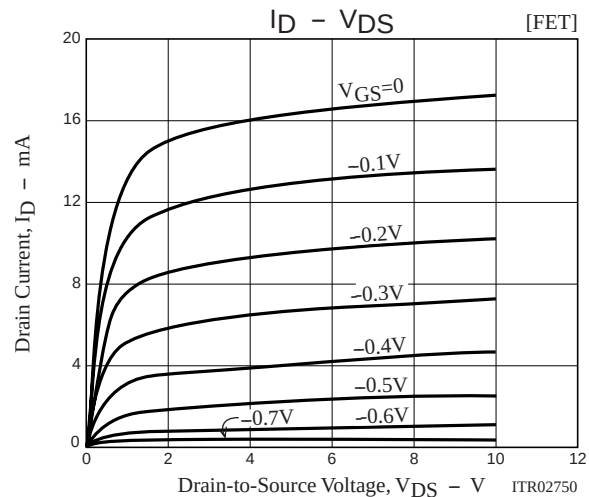
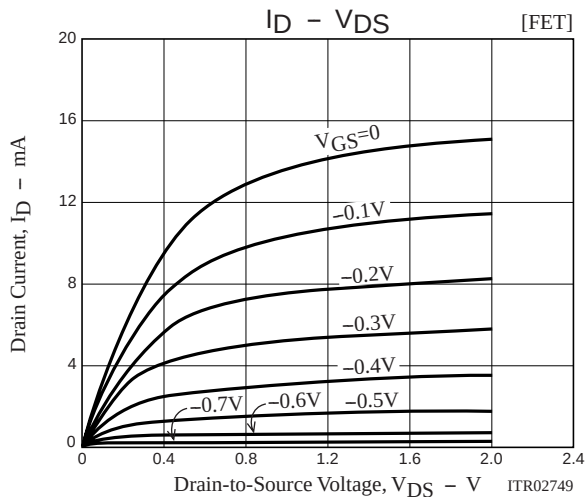
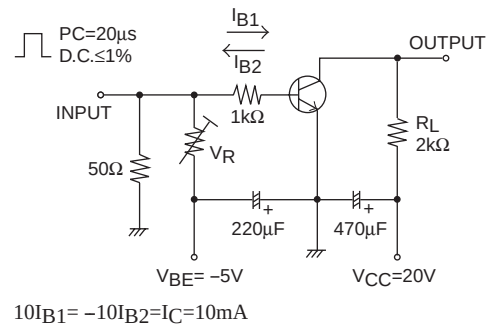
Rank	G	H
I_{DSS}	10.0 to 20.0	16.0 to 32.0

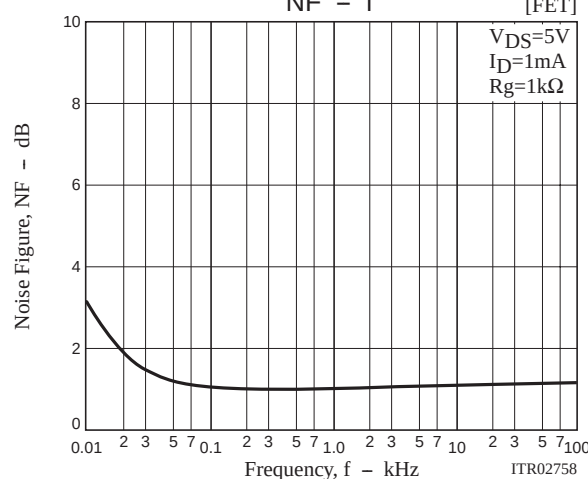
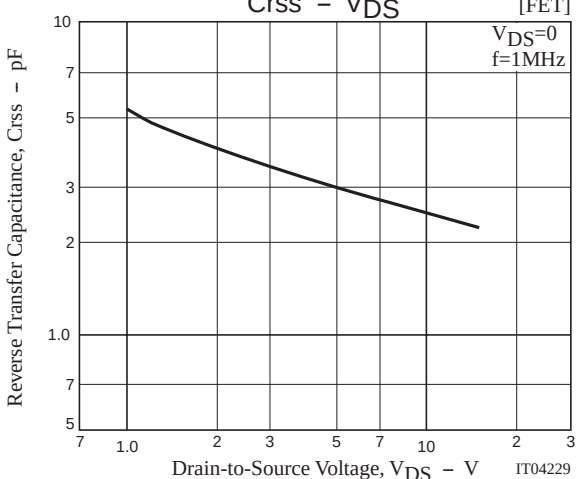
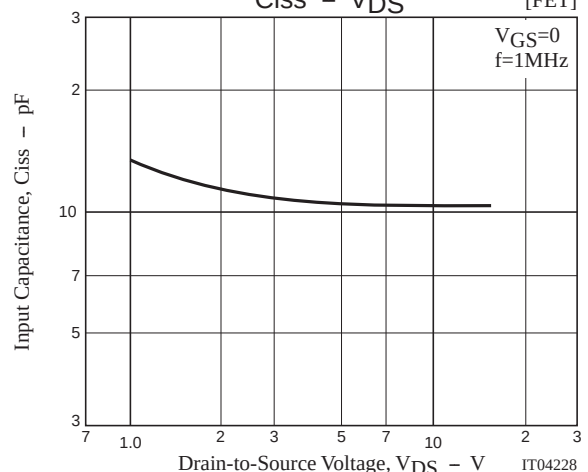
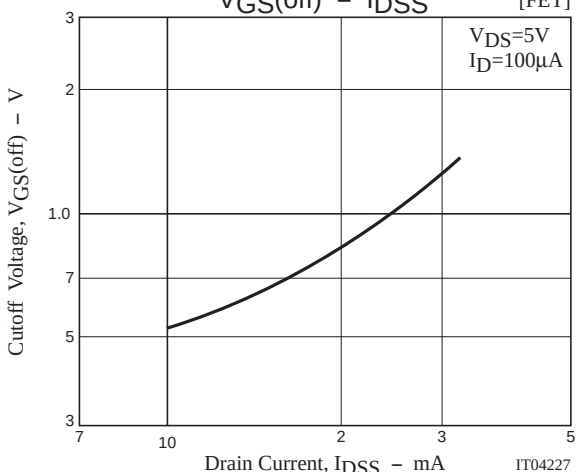
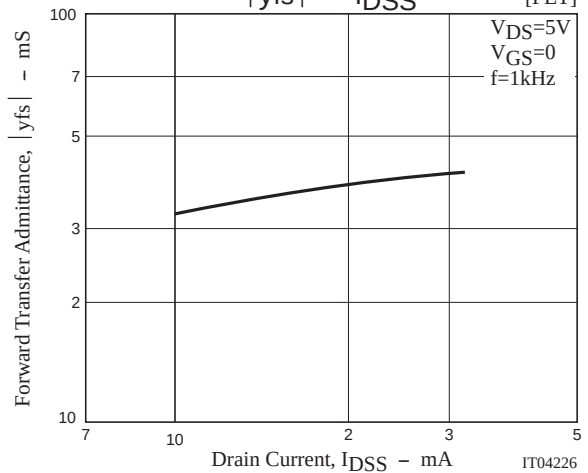
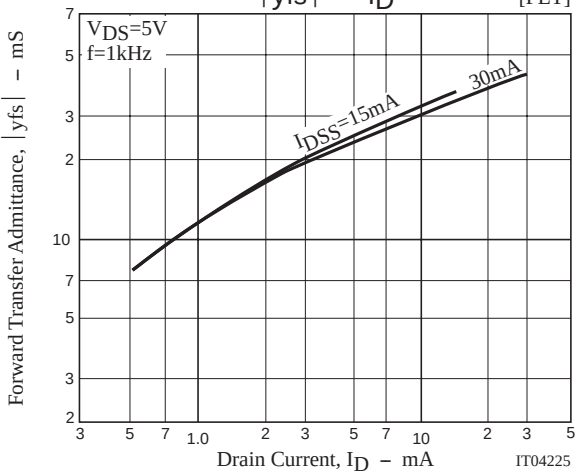
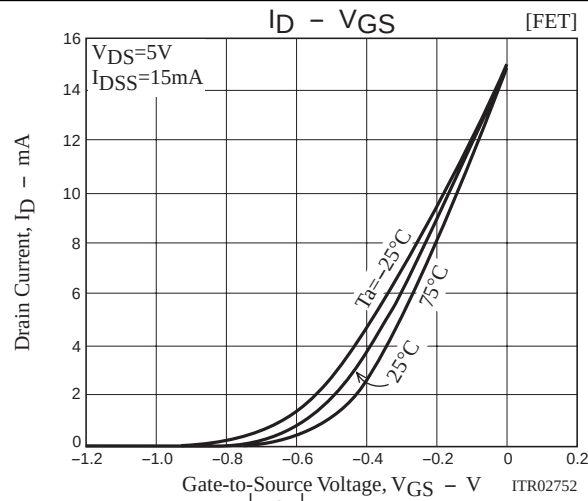
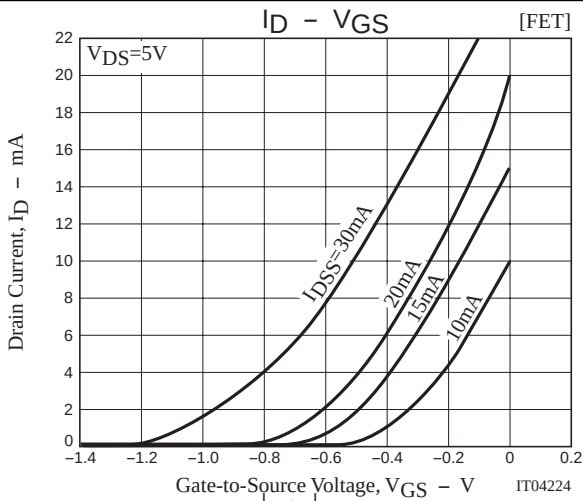
The specifications shown above are for each individual FET or a transistor.

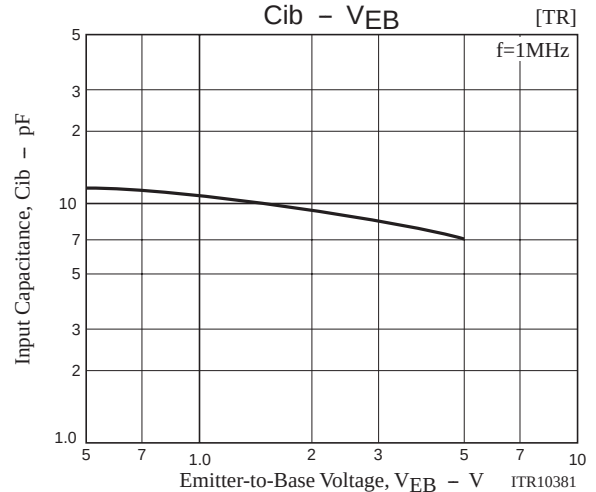
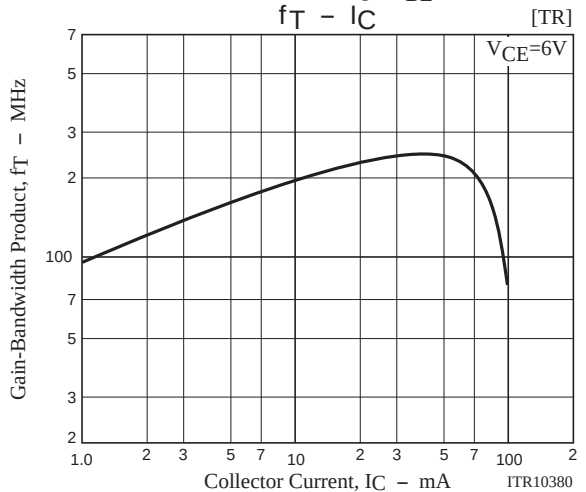
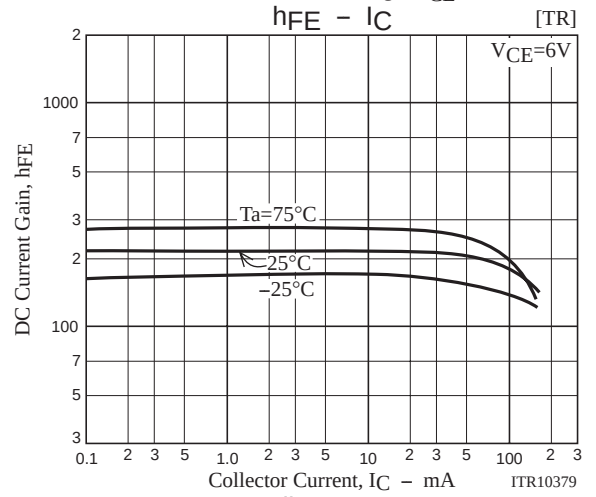
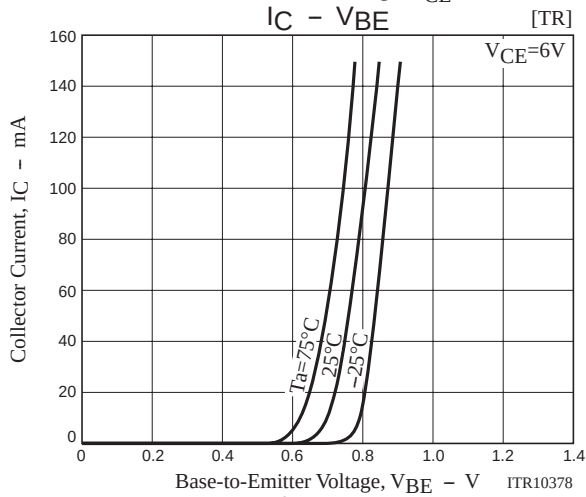
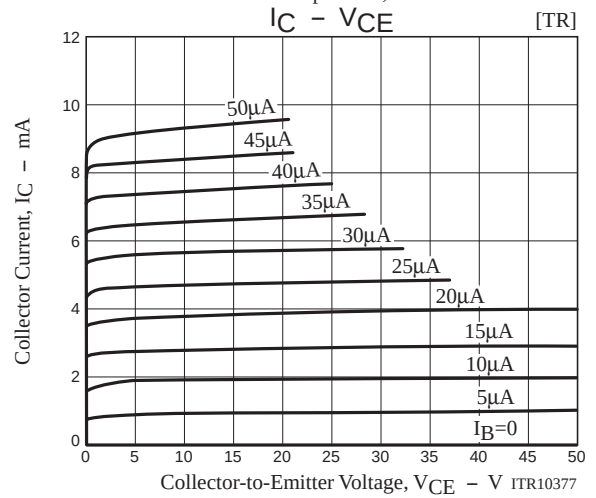
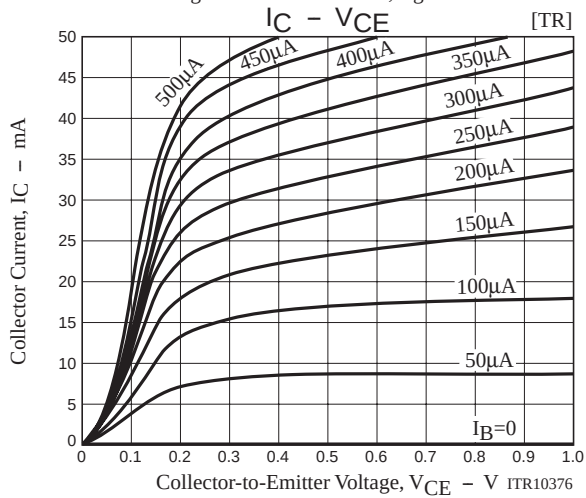
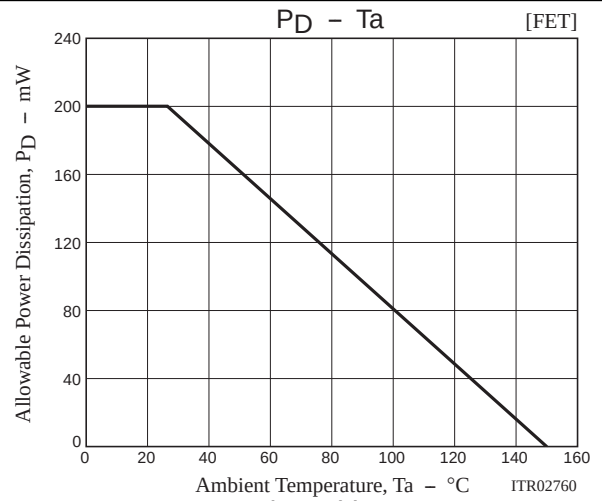
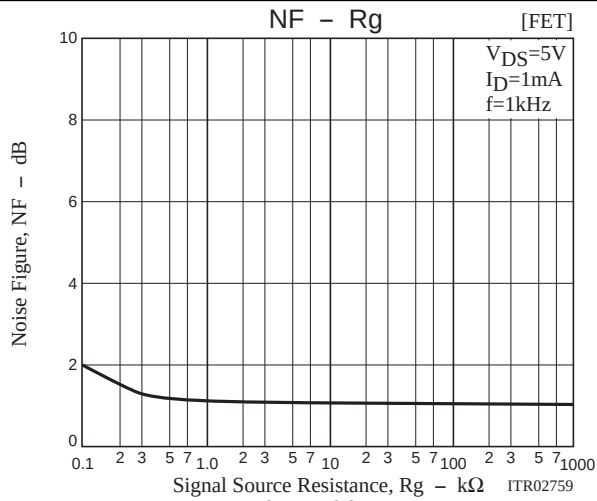
Electrical Connection (Top view)

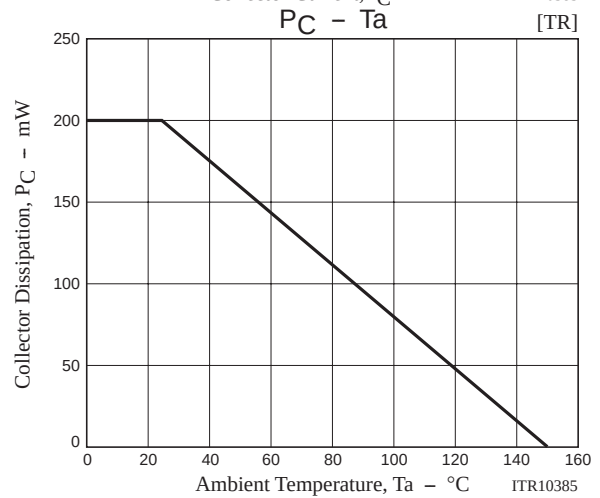
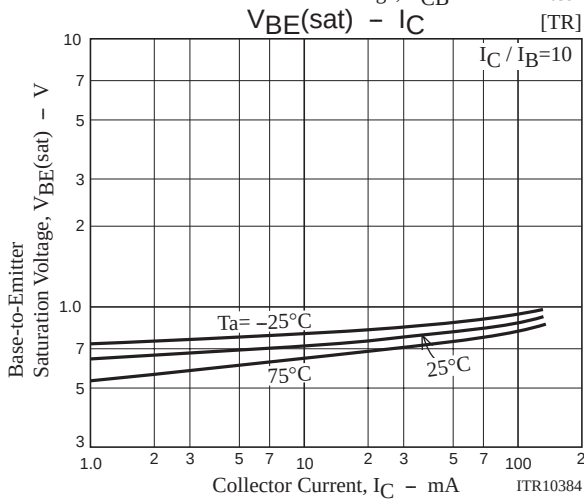
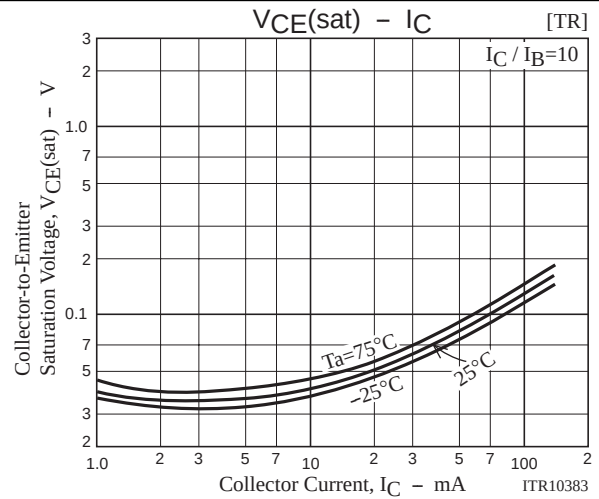
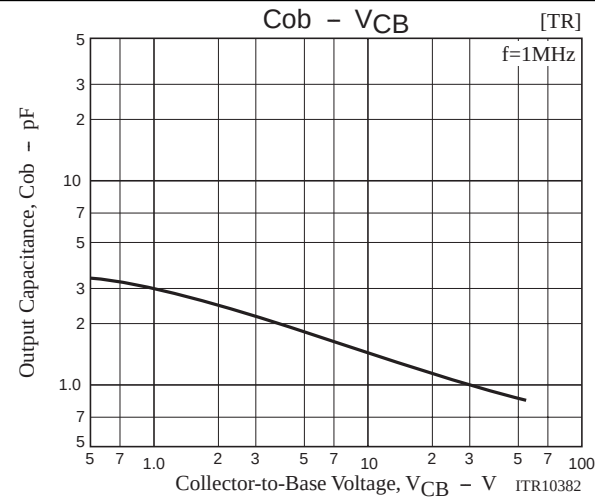


Switching Time Test Circuit









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