Ordering number : ENN7021

TR : NPN Epitaxial Planar Silicon Transistor
FET : N-Channel Silicon Junction FET

FC21

High-Frequency Amplifier, AM tuner RF Amplifier Applications

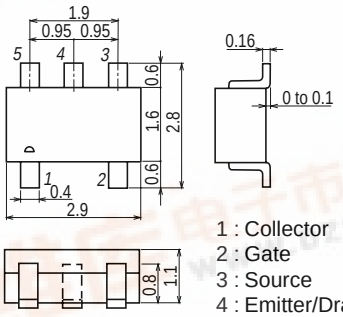
Features

- The FC21 contains both a 2SK1740 equivalent chip and a 2SC2812 equivalent chip in the CP package, thus realizes higher efficiency in device mounting on the PCB.

Package Dimensions

unit : mm
2122

[FC21]



1 : Collector
2 : Gate
3 : Source
4 : Emitter/Drain
5 : Base

SANYO : CP5

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[FET]				
Drain-to-Source Voltage	V_{DSX}		40	V
Gate-to-Drain Voltage	V_{GDS}		-40	V
Gate Current	I_G		10	mA
Drain Current	I_D		75	mA
Allowable Power Dissipation	P_D		400	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		600	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Marking : 1C

Electrical Characteristics at Ta=25°C

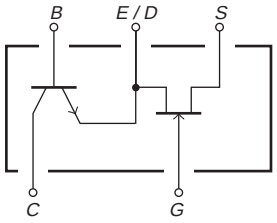
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[FET]						
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G=–10μA, V_{DS}=0	–40			V
Gate Cutoff Current	I_{GSS}	V_{GS}=–20V, V_{DS}=0			–1.0	nA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=100μA	–2.0	–3.0	–5.0	V
Drain Current	I_{DSS}	V_{DS}=10V, V_{GS}=0	40*		75*	mA
Forward Transfer Admittance	|yfs|	V_{DS}=10V, V_{GS}=0, f=1kHz	22	30		mS
Input Capacitance	Ciss	V_{DS}=10V, V_{GS}=0, f=1MHz		11		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, V_{GS}=0, f=1MHz		2.5		pF
Noise Figure	NF	V_{DS}=10V, Rg=1kΩ, I_D=1mA, f=1kHz		1.5		dB
[TR]						
Collector Cutoff Current	I_{CBO}	V_{CB}=35V, I_E=0			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			0.1	μA
DC Current Gain	h_{FE}	V_{CE}=6V, I_C=1mA	135		600	
Gain-Bandwidth Product	f_T	V_{CE}=6V, I_C=10mA		100		MHz
Output Capacitance	Cob	V_{CB}=6V, f=1MHz		3		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=50mA, I_B=5mA		0.1	0.5	V
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=50mA, I_B=5mA		0.8	1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	55			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	6			V

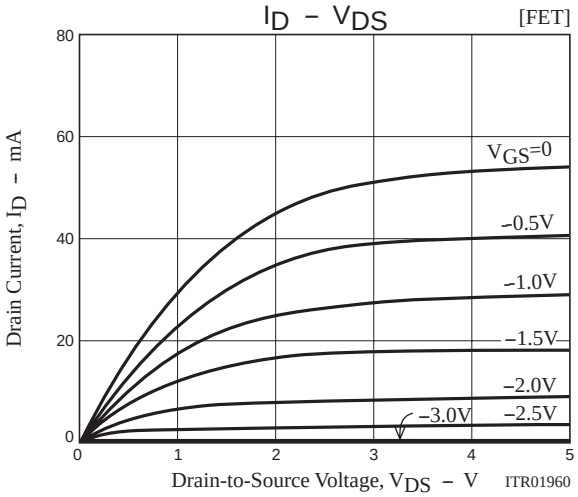
* : The FC21 is classified by I_{DSS} as follows : (unit : mA)

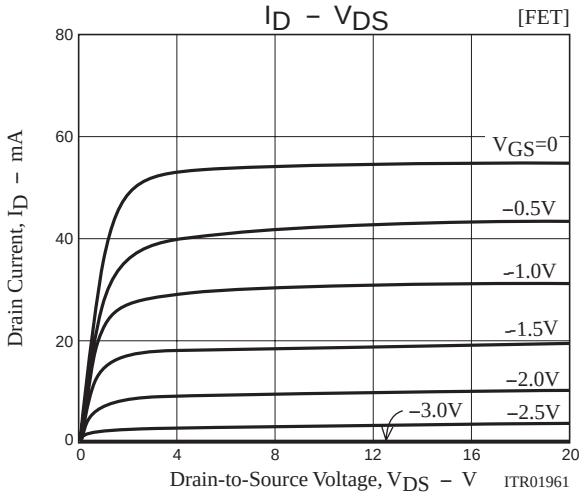
Rank	J	K	L
I_{DSS}	40 to 52	48 to 63	57 to 75

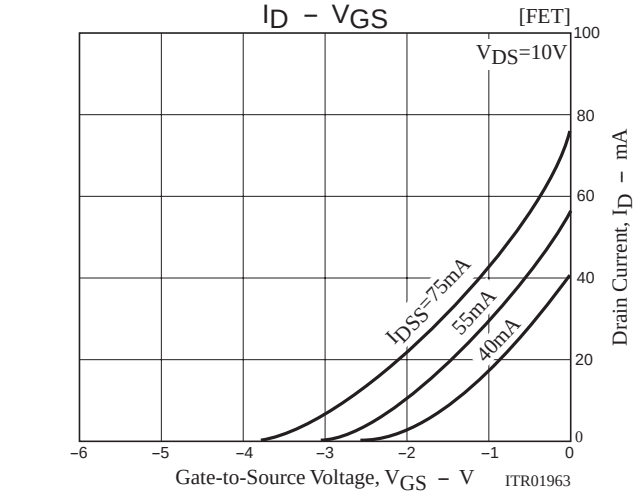
The specifications shown above are for each individual FET or transistor.

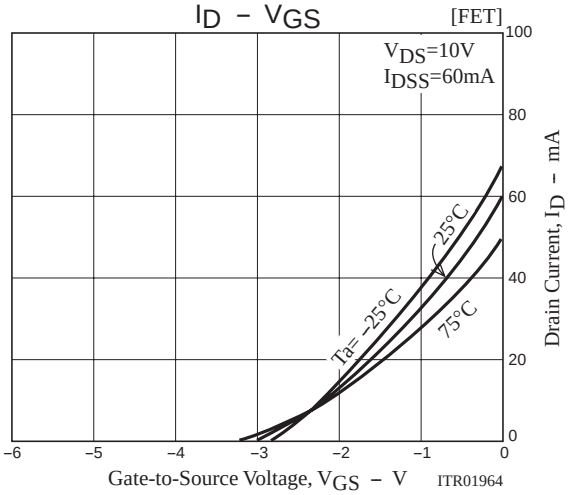
Electrical Connection



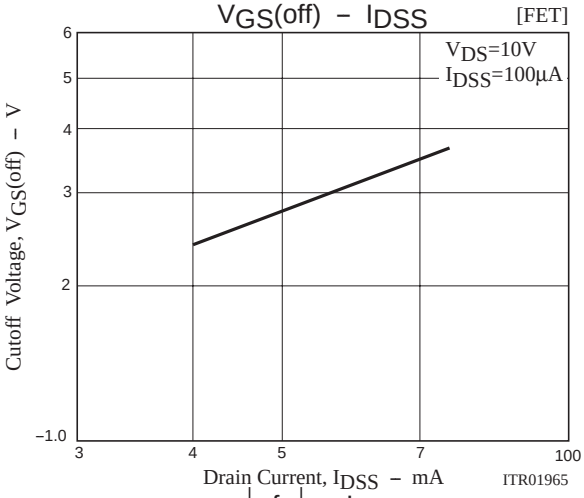




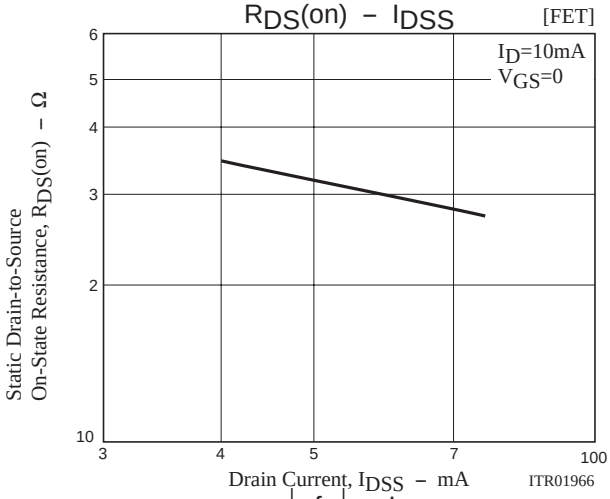




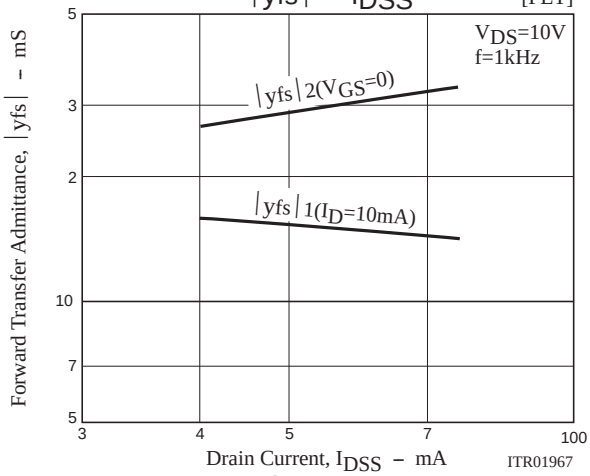
$V_{GS(off)}$ – I_{DSS} [FET]



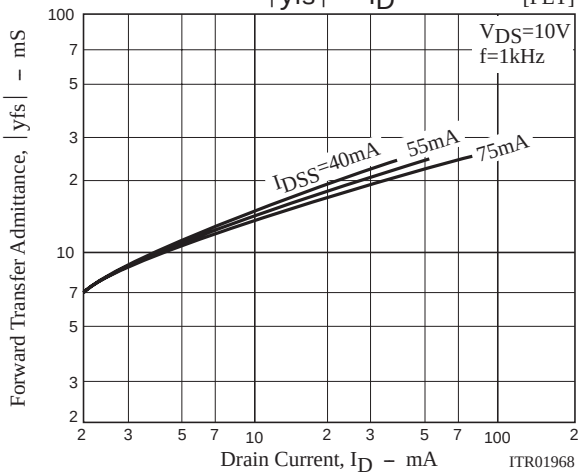
$R_{DS(on)}$ – I_{DSS} [FET]



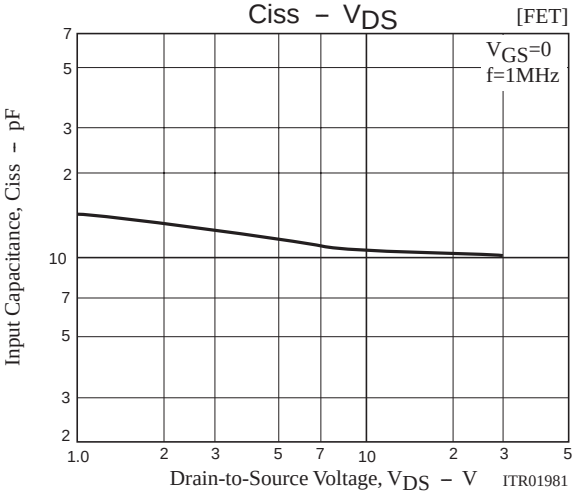
$|yfs|$ – I_{DSS} [FET]



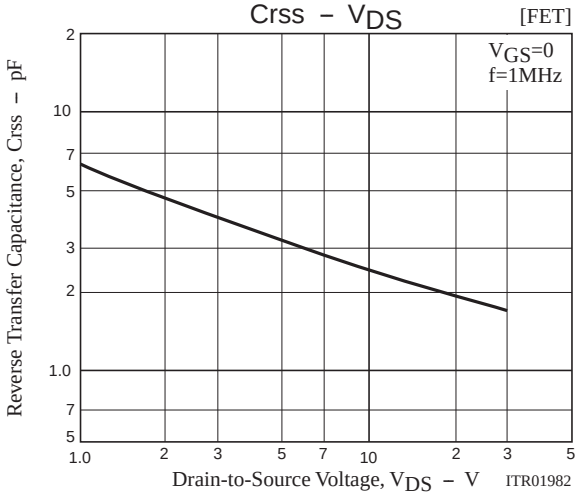
$|yfs|$ – I_D [FET]



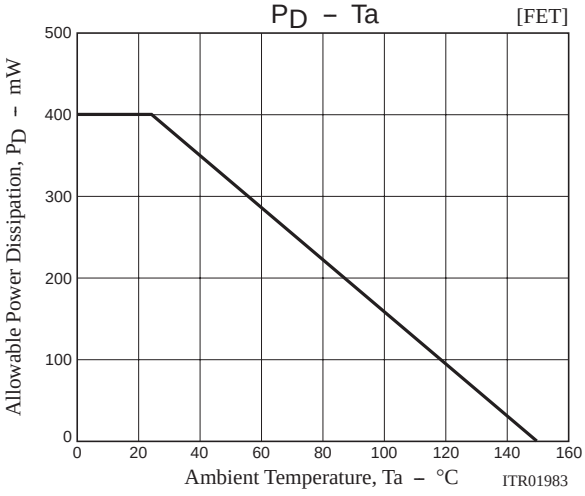
Ciss – V_{DS} [FET]



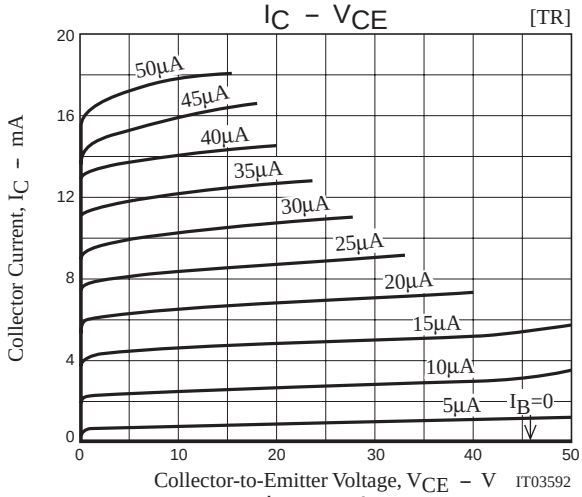
Crss – V_{DS} [FET]



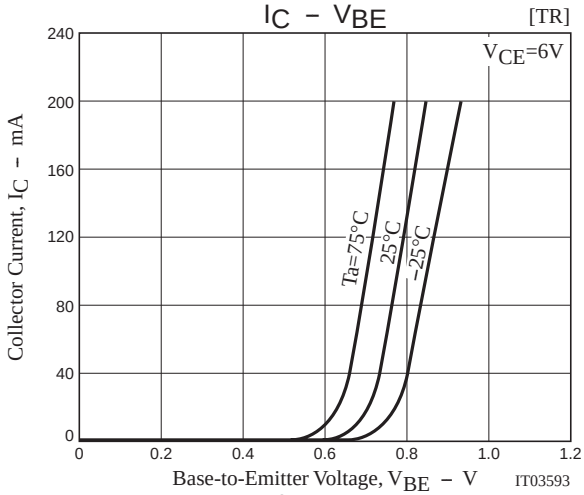
P_D – Ta [FET]



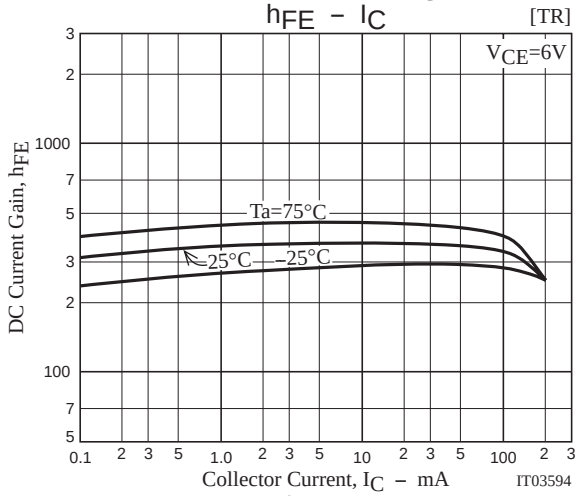
I_C – V_{CE} [TR]



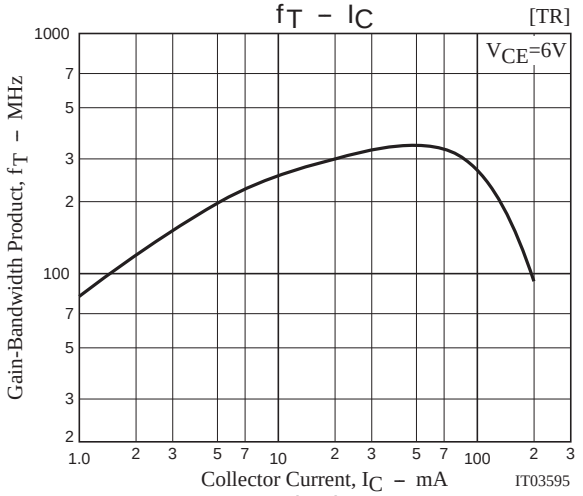
I_C – V_{BE} [TR]



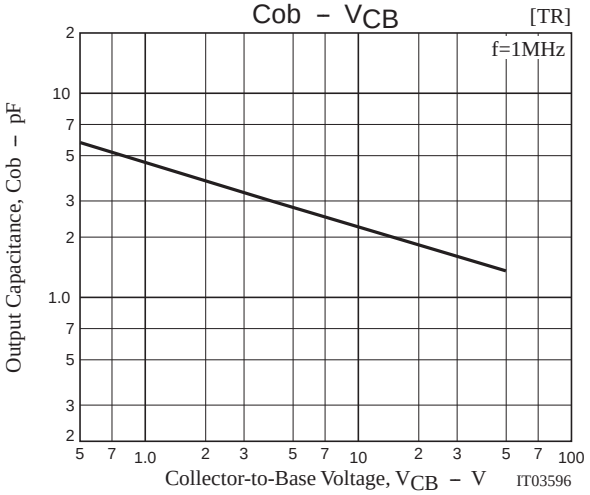
h_{FE} – I_C [TR]



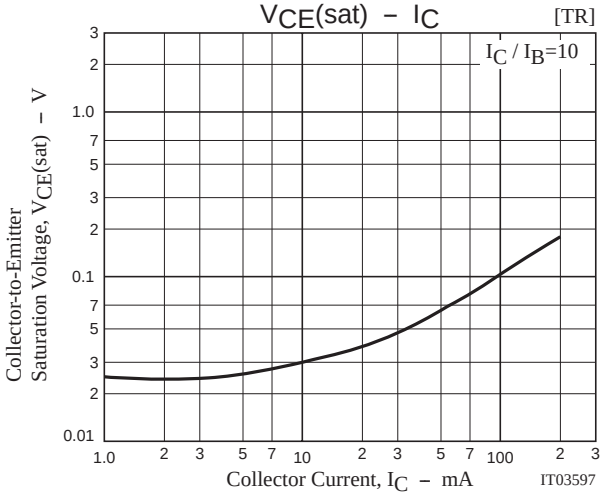
f_T – I_C [TR]



Cob – V_{CB} [TR]



V_{CE}(sat) – I_C [TR]



P_C – Ta [TR]