



SANYO Semiconductors

DATA SHEET

ECH8901

PNP Epitaxial Planar Silicon Transistor

P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Applications

- Charger.

Features

- Composite type, facilitating high-density mounting.
- Mounting height 0.9mm.
- IECO is guaranteed for preventing reverse flow from the collector to the emitter.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	VCBO		-30	V
Collector-to-Emitter Voltage	VCEO		-30	V
Emitter-to-Base Voltage	VEBO		-5	V
Collector Current	IC		-3	A
Collector Current (Pulse)	ICP		-6	A
Base Current	IB		-600	mA
Collector Dissipation	PC	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C
[FET]				
Drain-to-Source Voltage	VDSS		-12	V
Gate-to-Source Voltage	VGSS		±10	V
Drain Current (DC)	ID		-6	A
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	-40	A

Marking : LA

Continued on next page.

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Parameter	Symbol	Conditions	Ratings	Unit
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
Total Dissipation	P_T	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.5	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

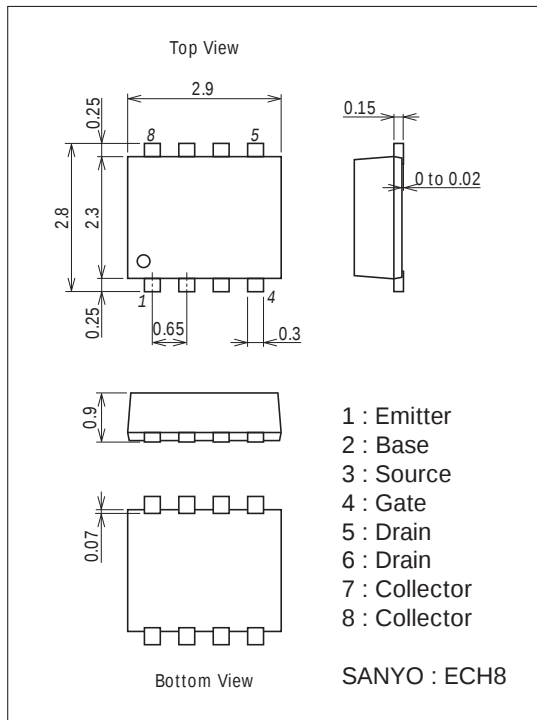
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I _{CBO}	V _{CB} = -30V, I _E =0A			-0.1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} = -4V, I _C =0A			-0.1	μA
	I _{ECO}	V _{EC} = -4.5V, I _B =0A			-1	μA
DC Current Gain	h _{FE}	V _{CE} = -2V, I _C = -500mA	200		560	
Gain-Bandwidth Product	f _T	V _{CE} = -10V, I _C = -500mA		380		MHz
Output Capacitance	C _{ob}	V _{CB} = -10V, f=1MHz		25		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)1}	I _C = -1.5A, I _B = -30mA		-140	-200	mV
	V _{CE(sat)2}	I _C = -1.5A, I _B = -75mA		-90	-135	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C = -1.5A, I _B = -30mA		-0.83	-1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C = -10μA, I _E =0A	-30			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C = -1mA, R _{BE} =∞	-30			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E = -10μA, I _C =0A	-5			V
Turn-On Time	t _{on}	See specified Test Circuit.		50		ns
Storage Time	t _{stg}	See specified Test Circuit.		270		ns
Fall Time	t _f	See specified Test Circuit.		25		ns
[FET]						
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =-1mA, V _{GS} =0V	-12			V
Zero-Gate Voltage Drain Current	I _{DSS1}	V _{DS} =-8V, V _{GS} =0V			-1	μA
	I _{DSS2}	V _{DS} =-12V, V _{GS} =0V			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-6V, I _D =-1mA	-0.4		-1.4	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-6V, I _D =-3A	6.6	11		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-3A, V _{GS} =-4.5V		21	28	mΩ
	R _{DS(on)2}	I _D =-1.5A, V _{GS} =-2.5V		31	45	mΩ
	R _{DS(on)3}	I _D =-0.5A, V _{GS} =-1.8V		49	78	mΩ
Input Capacitance	C _{iss}	V _{DS} =-6V, f=1MHz		1000		pF
Output Capacitance	C _{oss}	V _{DS} =-6V, f=1MHz		320		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =-6V, f=1MHz		250		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		11		ns
Rise Time	t _r	See specified Test Circuit.		72		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		105		ns
Fall Time	t _f	See specified Test Circuit.		87		ns
Total Gate Charge	Q _g	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-6A		11		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-6A		1.5		nC
Gate-to-Drain “Miller” Charge	Q _{gd}	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-6A		2.9		nC
Diode Forward Voltage	V _{SD}	I _S =-6A, V _{GS} =0V		-0.81	-1.2	V

Note : The specifications shown above are for each individual transistor.

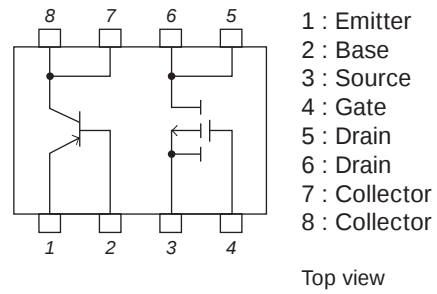
Package Dimensions

unit : mm (typ)

7011A-006

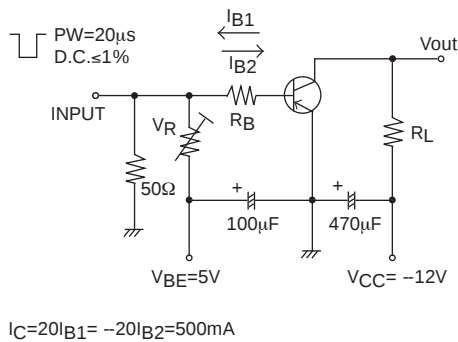


Electrical Connection

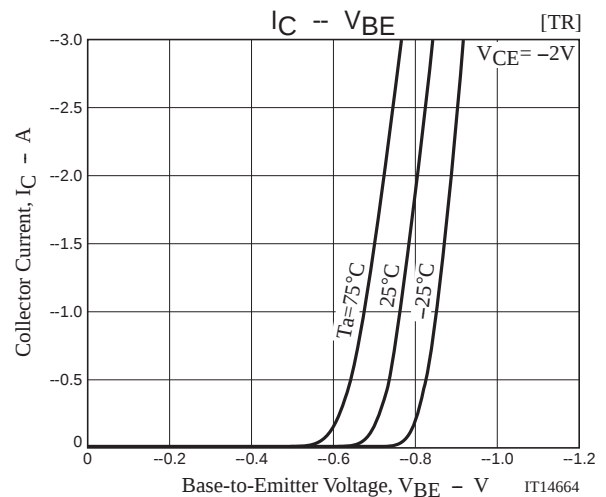
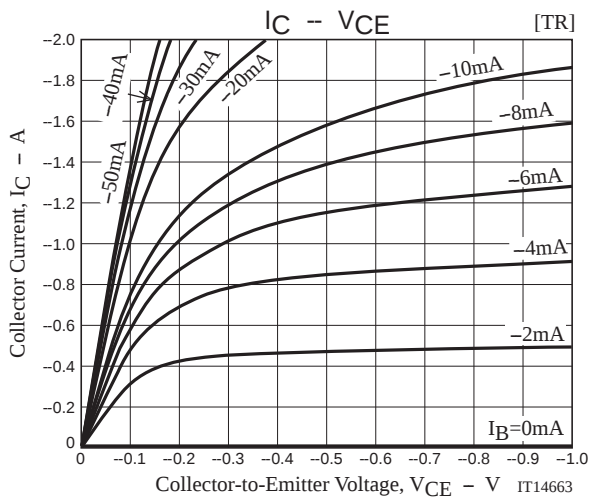
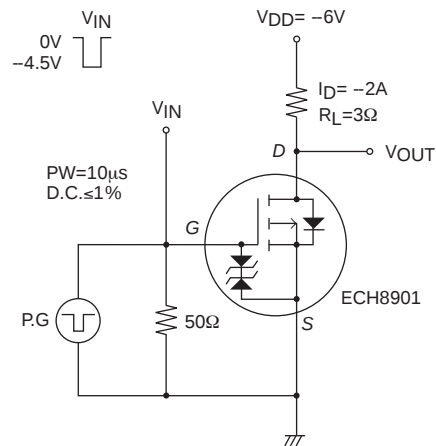


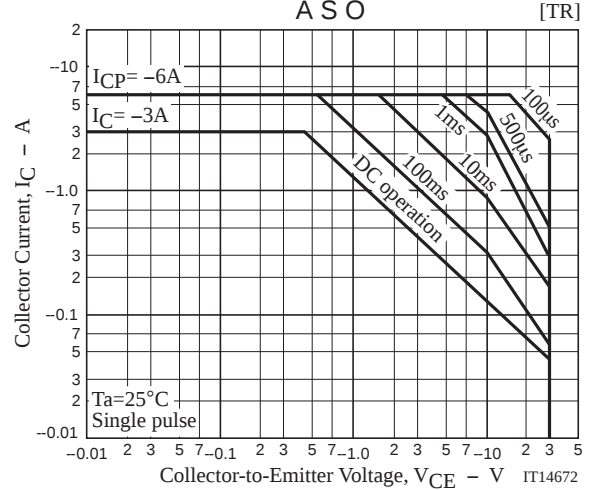
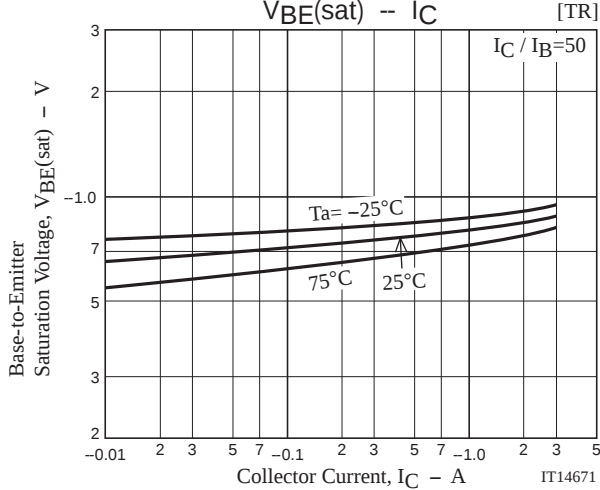
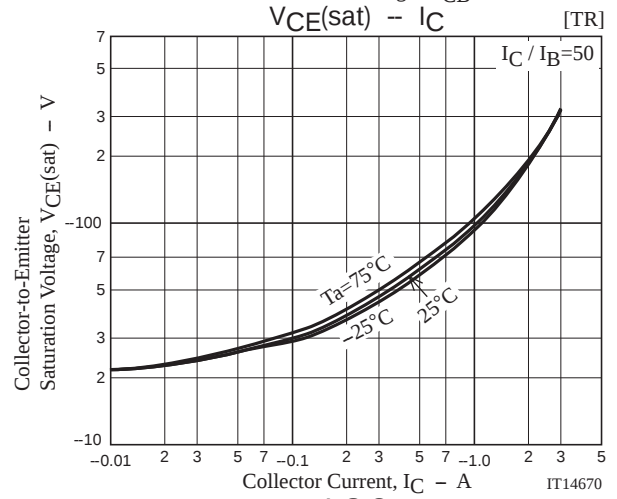
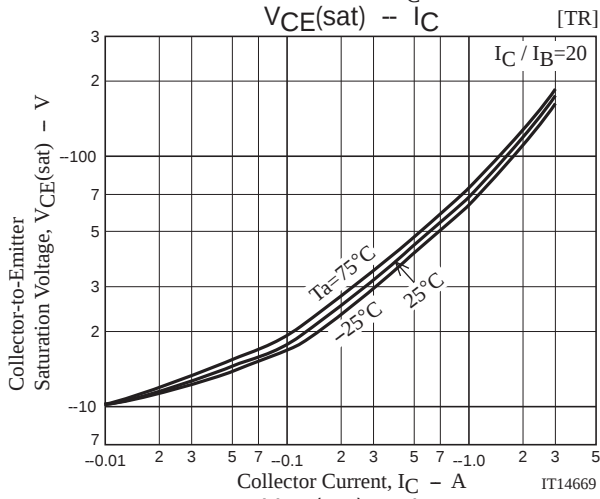
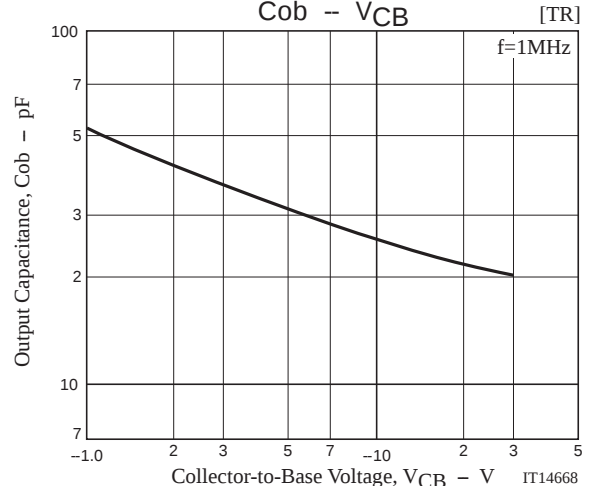
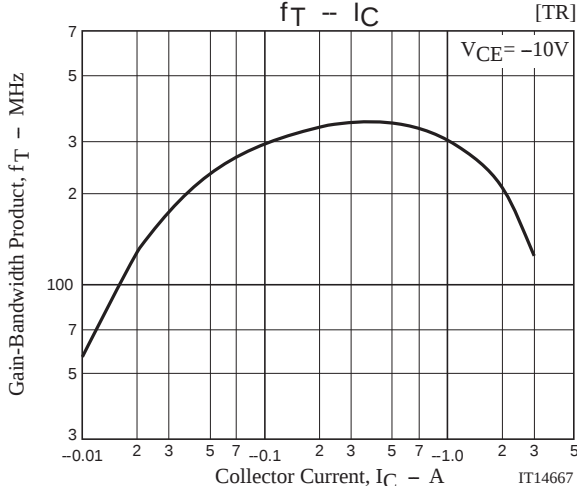
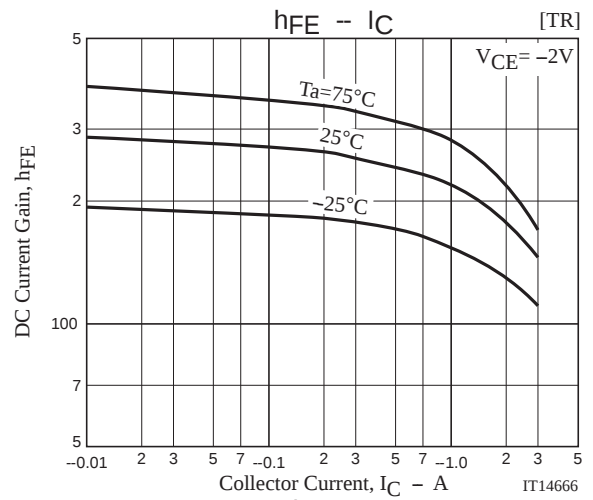
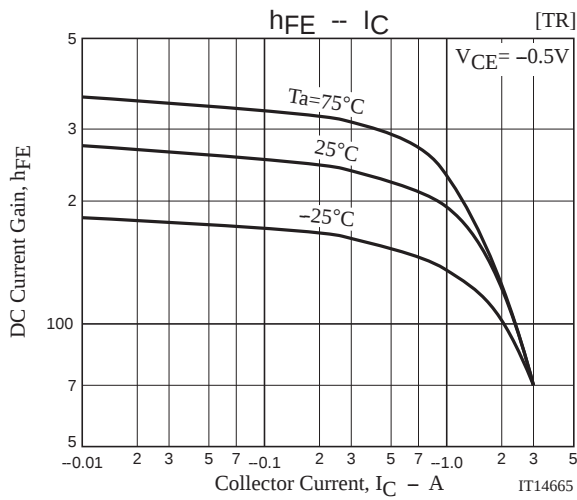
Switching Time Test Circuit

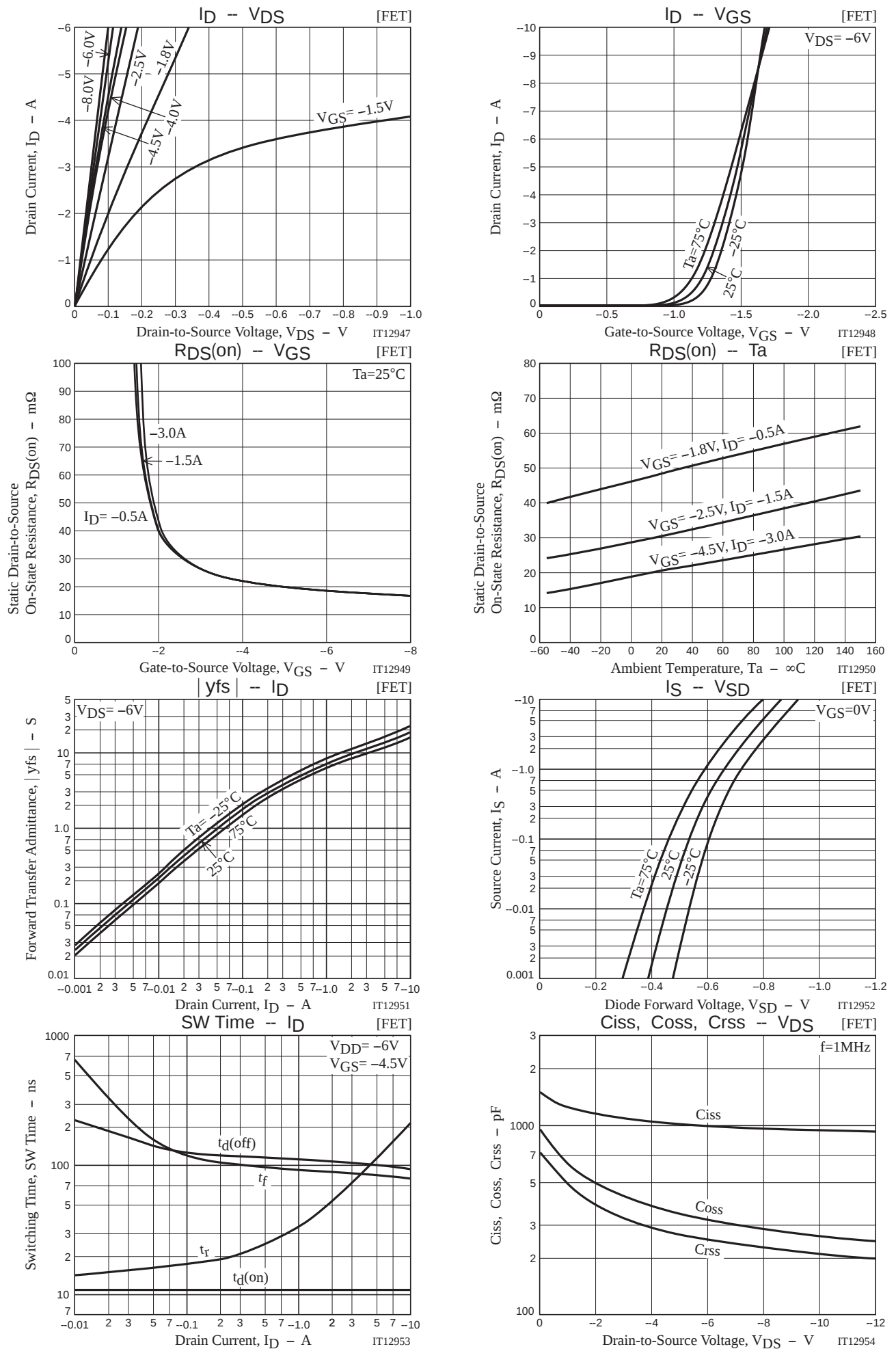
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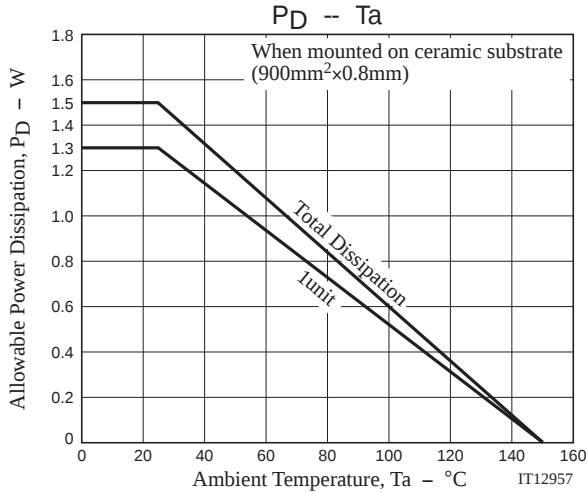
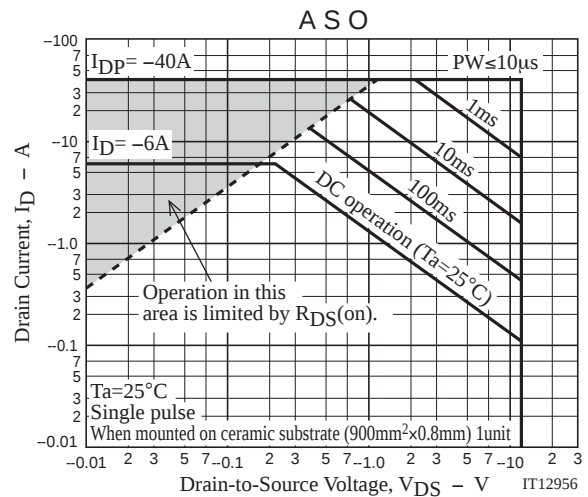
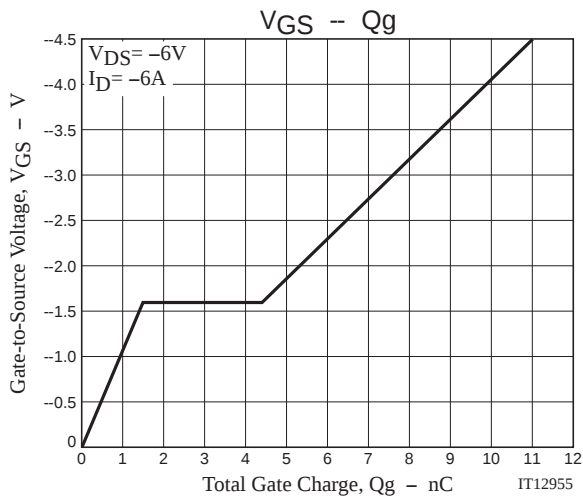


[FET]









Note on usage : Since the ECH8901 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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