

Ordering number:EN5387



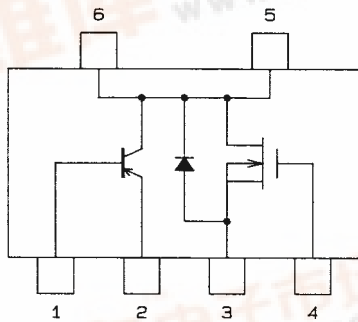
# FX901

PNP Epitaxial Planar Silicon Transistor  
N-Channel MOS Silicon FET  
Silicon Schottky Barrier Diode  
**DC-DC Converter Applications**

## Features

- Composite type with a PNP transistor and a 2.5V drive N-channel MOSFET with a built-in low forward-voltage Schottky barrier diode facilitating high-density mounting.

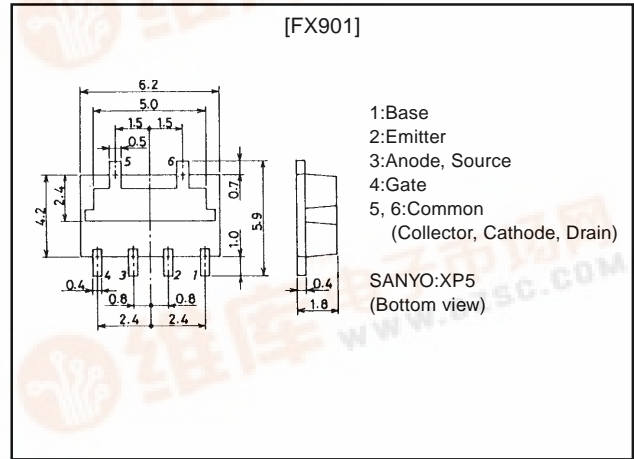
## Electrical Connection



## Package Dimensions

unit:mm

2133



## Specifications

### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Allowable Power Dissipation	P	Tc=25°C, 1 unit	8	W
	P	Mounted on ceramic board (750mm <sup>2</sup> ×0.8mm) 1 unit	1.5	W
Total Power Dissipation	P <sub>T</sub>	Mounted on ceramic board (750mm <sup>2</sup> ×0.8mm)	2	W
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C
[TR]				
Collector-to-Base Voltage	V <sub>CB0</sub>		-15	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		-11	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-7	V
Collector Current	I <sub>C</sub>		-3	A
Collector Current (Pulse)	I <sub>CP</sub>		-5	A
Base Current	I <sub>B</sub>		-600	mA
Junction Temperature	T <sub>j</sub>		150	°C
[MOSFET]				
Drain-to-Source Voltage	V <sub>DSS</sub>		11	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		2	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	8	A
Channel Temperature	T <sub>ch</sub>		150	°C
[SBD]				
Average Rectified Current	I <sub>O</sub>		500	mA

· Marking:901

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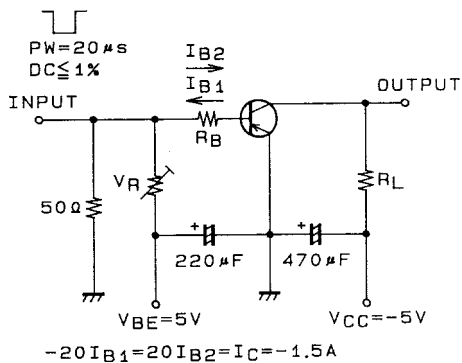
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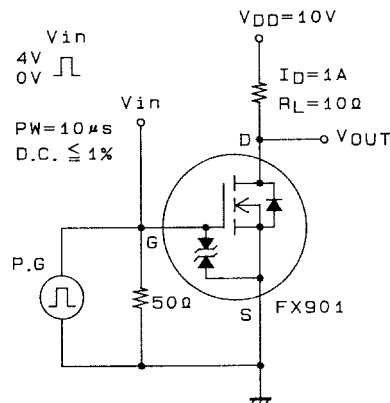
## Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-12V, I_E=0$			-0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-6V, I_C=0$			-0.1	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2V, I_C=-0.5A$	140		560	
	$h_{FE(2)}$	$V_{CE}=-2V, I_C=-3A$	70			
Gain-Bandwidth Product	$f_T$	$V_{CE}=-2V, I_C=-0.3A$		400		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10V, f=1MHz$		26		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=-1.5A, I_B=-30mA$		-0.22	-0.4	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=-1.5A, I_B=-30mA$		-0.9	-1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-15			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-11			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-7			V
Turn-ON time	$t_{on}$	See specified Test Circuit		25		ns
Storage Time	$t_{stg}$	See specified Test Circuit		200		ns
Fall Time	$t_f$	See specified Test Circuit		10		ns
[MOSFET]						
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	11			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=10.4V, V_{GS}=0$			400	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8V, V_{DS}=0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	0.5		1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=10V, I_D=1A$	1.8	2.8		S
Static Drain-to-Source ON-Resistance	$R_{DS(on)}$	$I_D=1A, V_{GS}=4V$		140	200	m $\Omega$
	$R_{DS(on)}$	$I_D=500mA, V_{GS}=2.5V$		200	320	m $\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=10V, f=1MHz$		185		pF
Output Capacitance	$C_{oss}$	$V_{DS}=10V, f=1MHz$		210		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=10V, f=1MHz$		40		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		15		ns
Rise Time	$t_r$	See specified Test Circuit		40		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		50		ns
Fall Time	$t_f$	See specified Test Circuit		35		ns
[SBD]						
Forward Voltage	$V_F$	$I_F=500mA$		0.4	0.45	V
Reverse Recovery Time	$t_{rr}$	$I_F=500mA, di/dt=50A/\mu s$		20	30	ns

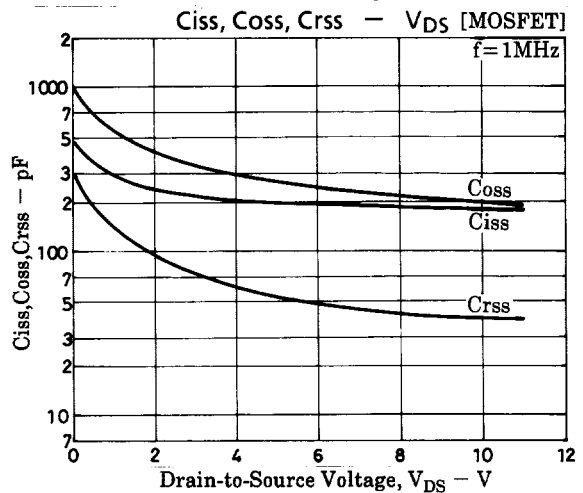
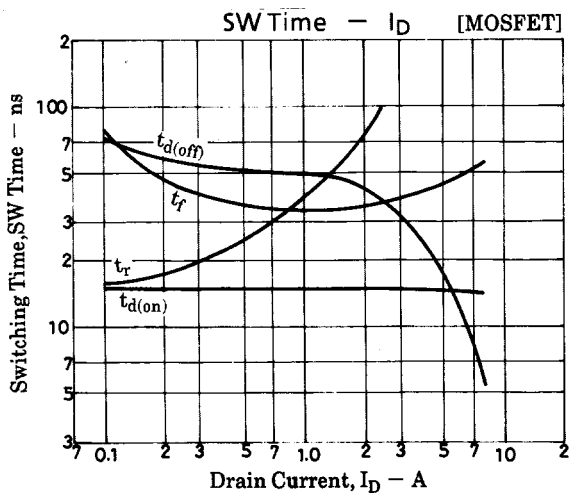
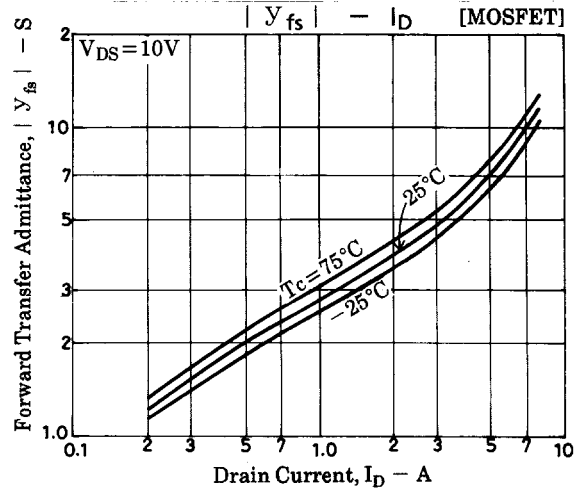
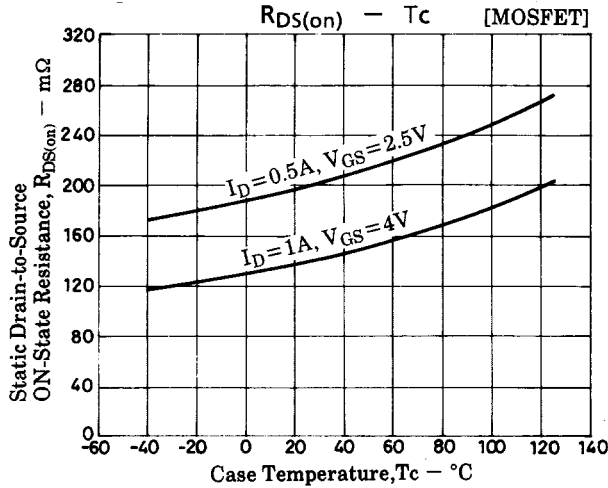
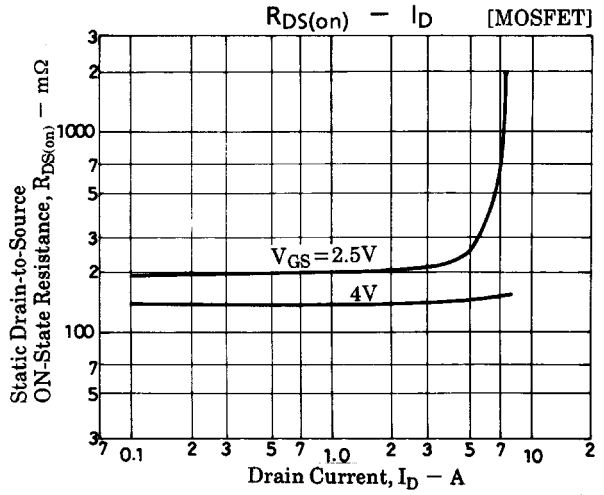
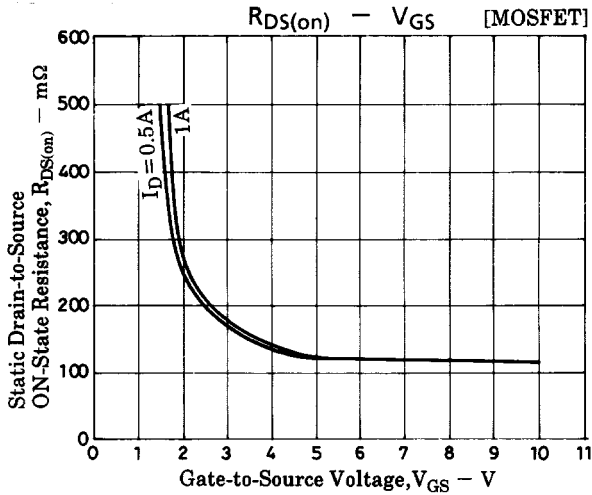
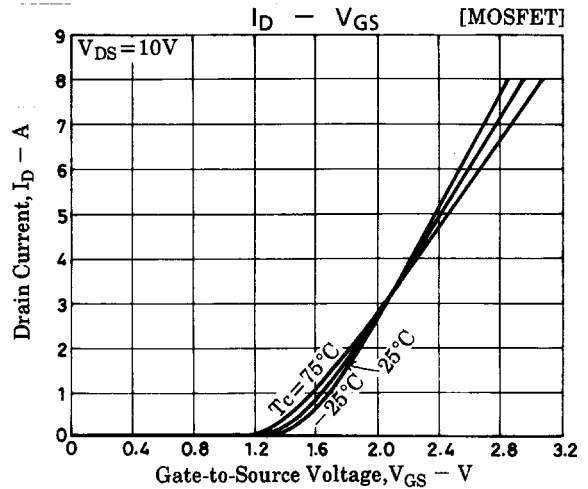
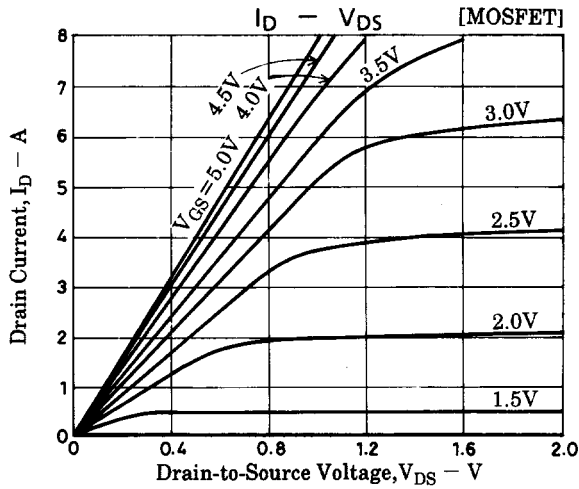
### Switching Time Test Circuit [TR]



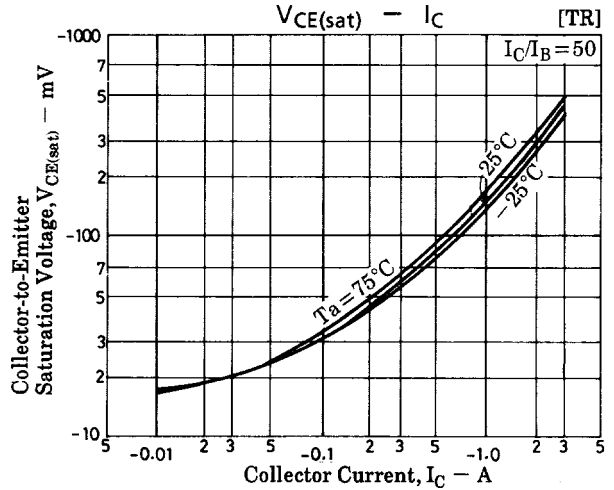
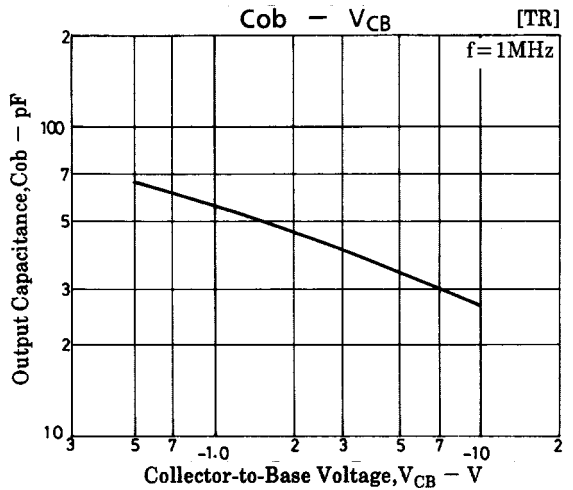
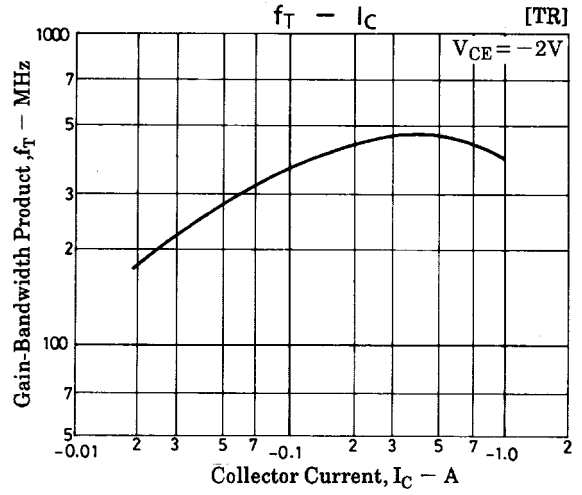
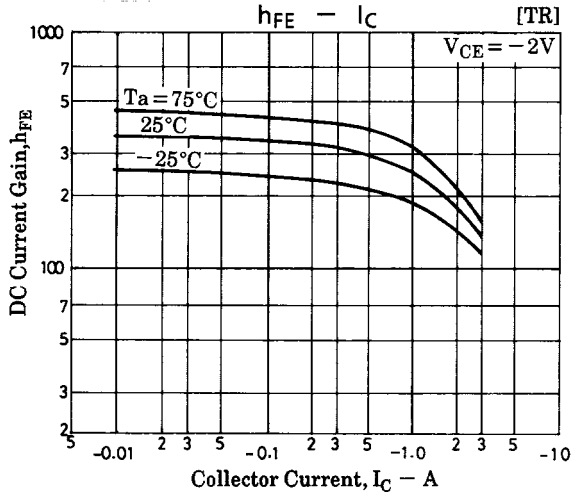
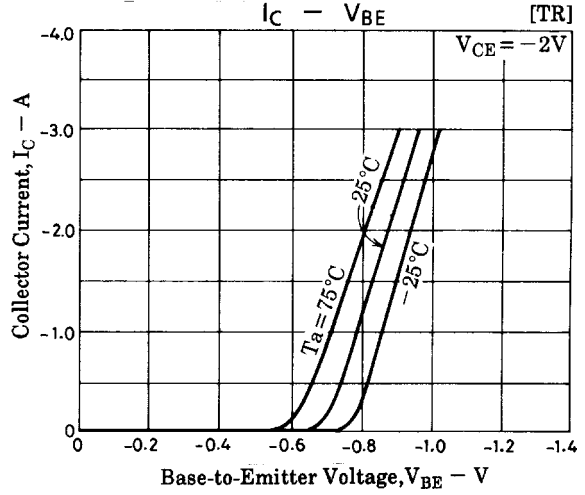
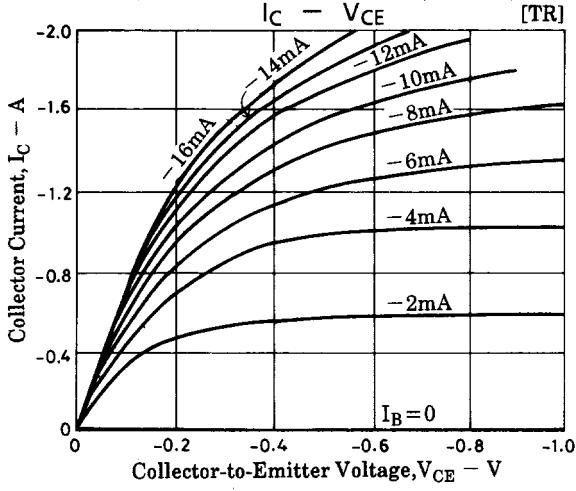
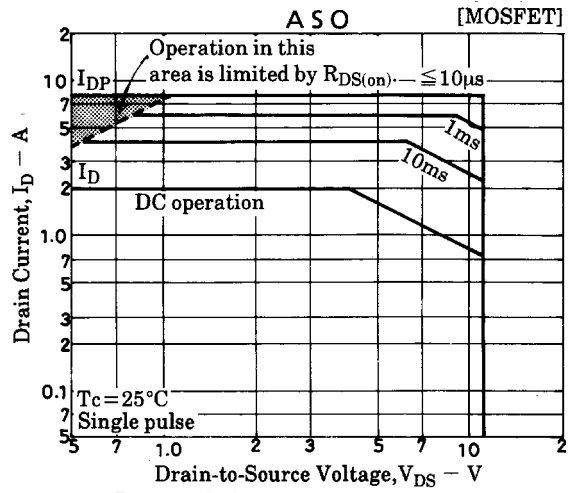
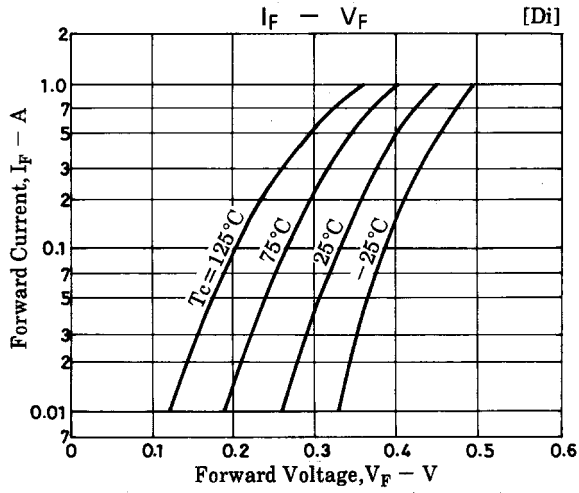
### Trr Test Circuit [MOSFET]



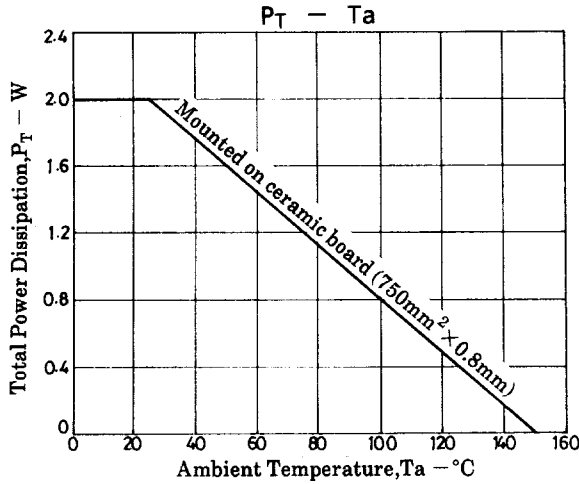
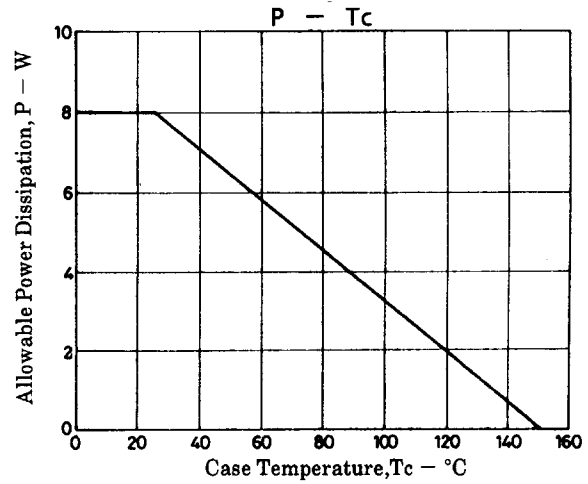
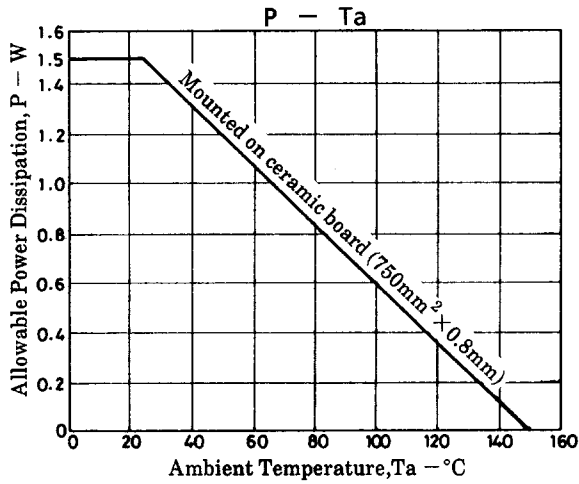
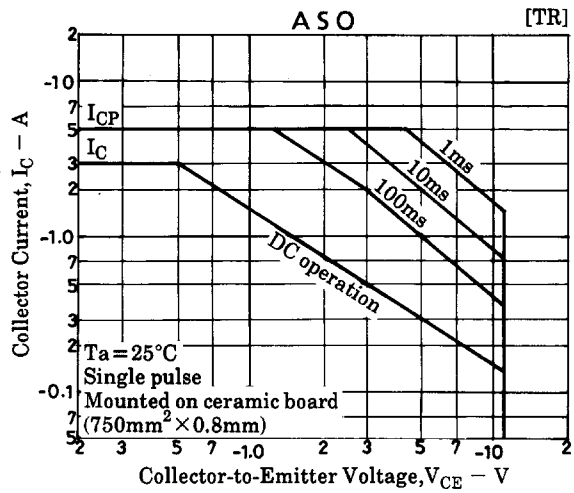
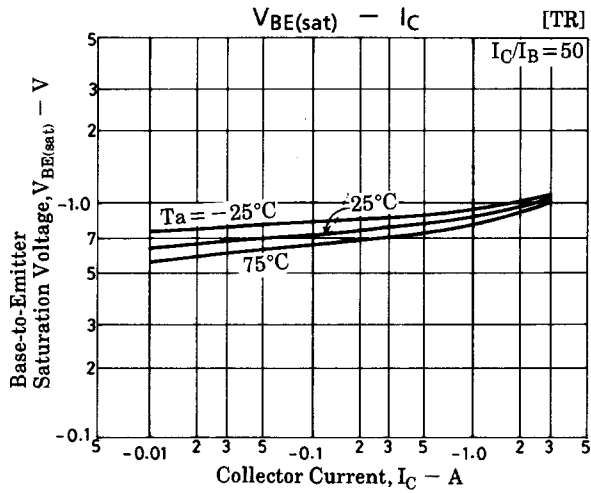
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