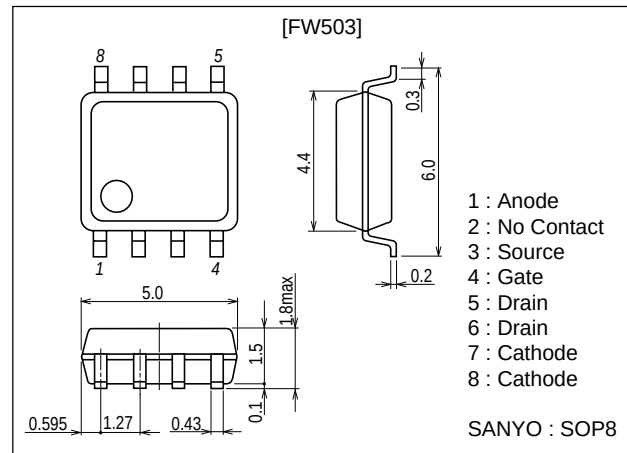


**FW503****DC / DC Converter Applications****Features**

- Composite type with a low ON-resistance, ultrahigh-speed switching, low voltage drive, P-channel MOSFET and a short reverse recovery time, low forward voltage schottky barrier diode facilitating high-density mounting.
- The FW503 incorporates two chips being equivalent to the MCH3306 and the SBS004 in one package.

Package Dimensionsunit : mm
2210**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[MOSFET]				
Drain-to-Source Voltage	V _{DSS}		-20	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-3	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-12	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (2000mm²×0.8mm) ≤10S	2	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V _{RRM}		15	V
Nonrepetitive Peak Reverse Surge Voltage	V _{RSM}		15	V
Average Output Current	I _O		1	A
Surge Forward Current	I _{FSM}	50Hz sine wave, 1 cycle	10	A
Junction Temperature	T _J		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

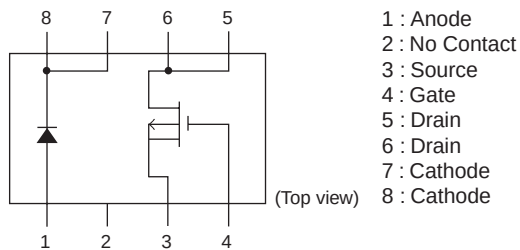
Marking : W503

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- SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

Electrical Characteristics at $T_a=25^{\circ}\text{C}$

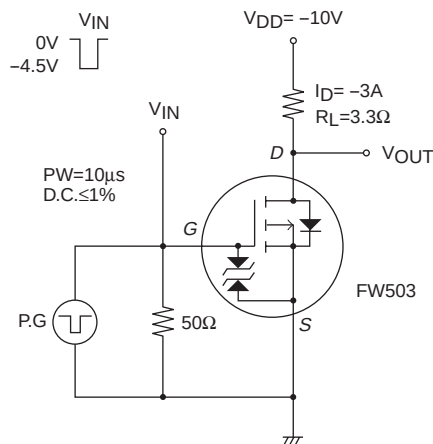
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=-1mA, VGS=0	-20			V
Zero-Gate Voltage Drain Current	IDSS	VDS=-20V, VGS=0			-10	μA
Gate-to-Source Leakage Current	IGSS	VGSS=±8V, VDS=0			±10	μA
Cutoff Voltage	VGS(off)	VDS=-10V, ID=-1mA	-0.3		-1.0	V
Forward Transfer Admittance	yfs	VDS=-10V, ID=-3A	3.5	5		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=-3A, VGS=-4.5V		130	170	mΩ
	RDS(on)2	ID=-2.5A, VGS=-2.5V		170	240	mΩ
	RDS(on)3	ID=-0.1A, VGS=-1.8V		230	340	mΩ
Input Capacitance	Ciss	VDS=-10V, f=1MHz		410		pF
Output Capacitance	Coss	VDS=-10V, f=1MHz		60		pF
Reverse Transfer Capacitance	Crss	VDS=-10V, f=1MHz		40		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		9		ns
Rise Time	tr	See specified Test Circuit.		27		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit.		42		ns
Fall Time	tf	See specified Test Circuit.		38		ns
Total Gate Charge	Qg	VDS=-10V, VGS=-4.5V, ID=-3A		5.0		nC
Gate-to-Source Charge	Qgs	VDS=-10V, VGS=-4.5V, ID=-3A		0.6		nC
Gate-to-Drain “Miller” Charge	Qgd	VDS=-10V, VGS=-4.5V, ID=-3A		1.2		nC
Diode Forward Voltage	VSD	IS=-3A, VGS=0		-1.0	-1.2	V
[SBD]						
Reverse Voltage	VR	IR=1mA	15			V
Forward Voltage	VF1	IF=0.5A		0.3	0.35	V
	VF2	IF=1A		0.35	0.4	V
Reverse Current	IR	VR=15V			500	μA
Interterminal Capacitance	C	VR=10V, f=1MHz cycle		42		pF
Reverse Recovery Time	trr	IF=IR=100mA, See specified Test Circuit.			15	ns

Electrical Connection

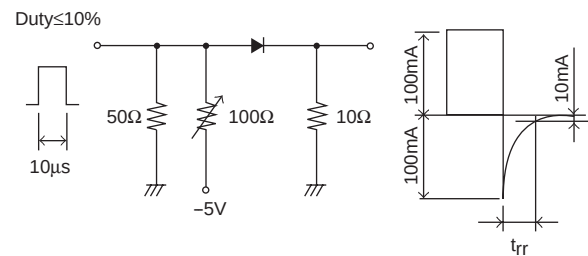


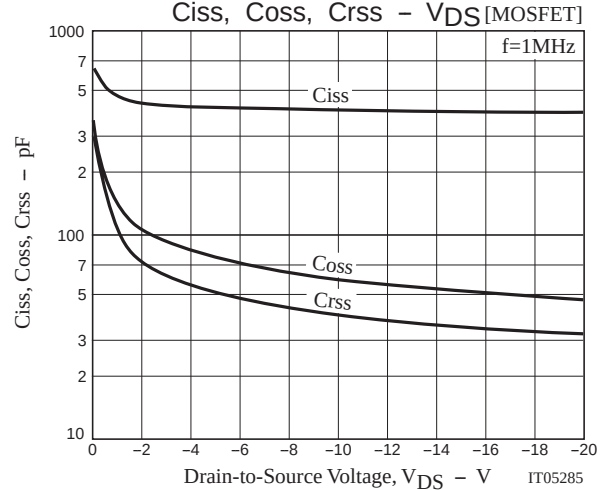
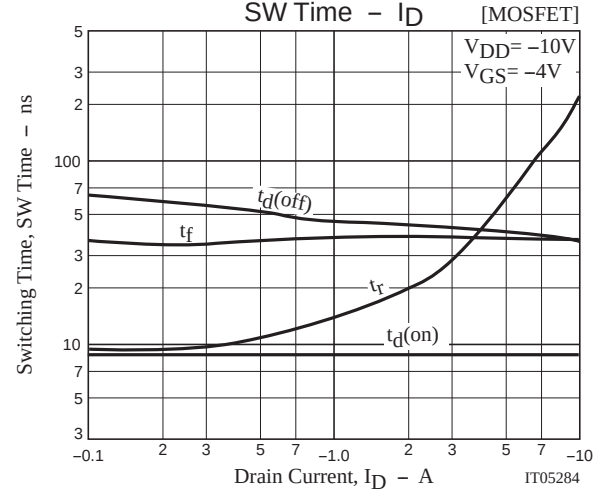
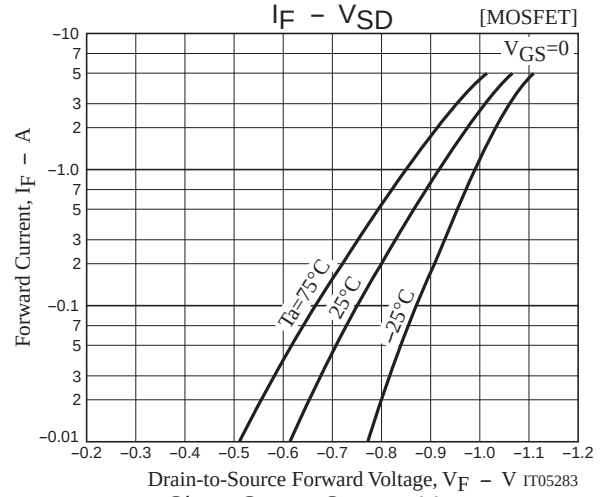
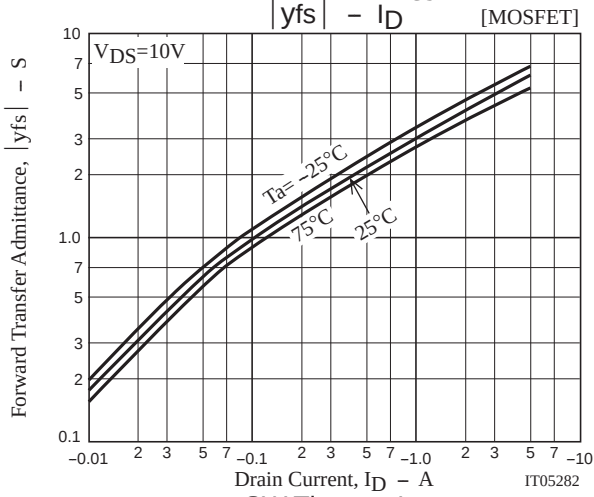
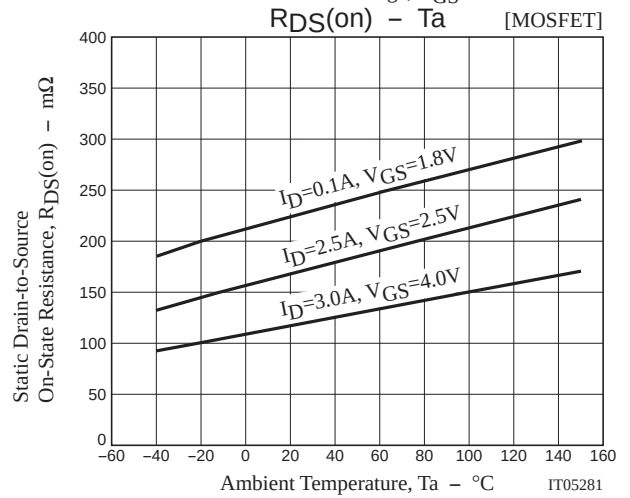
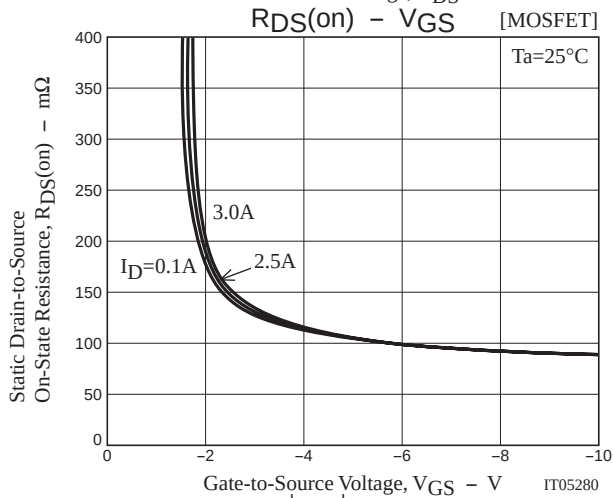
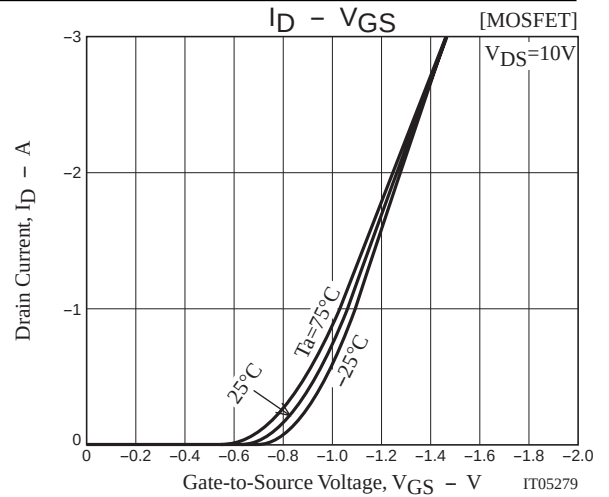
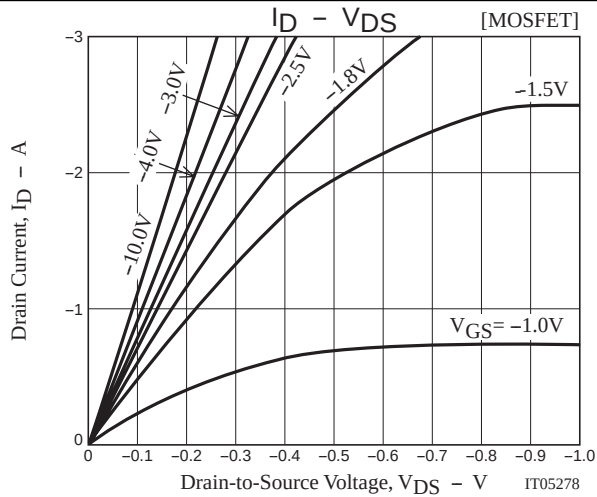
Switching Time Test Circuit

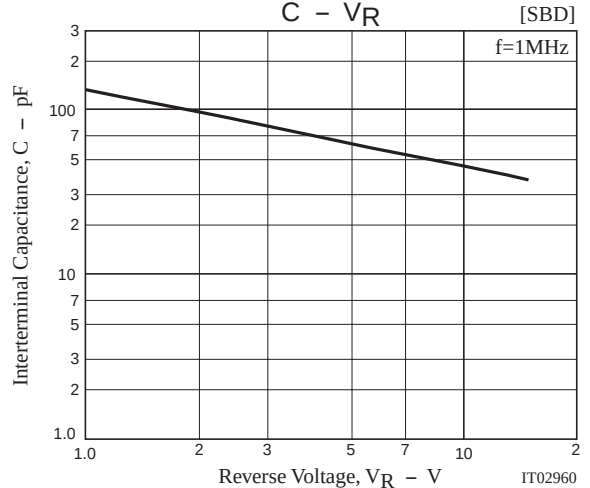
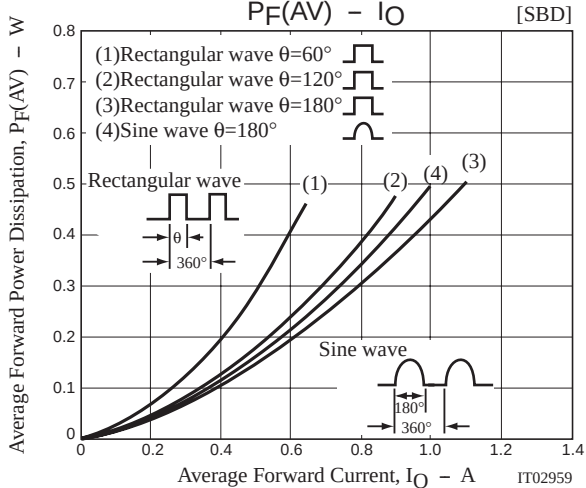
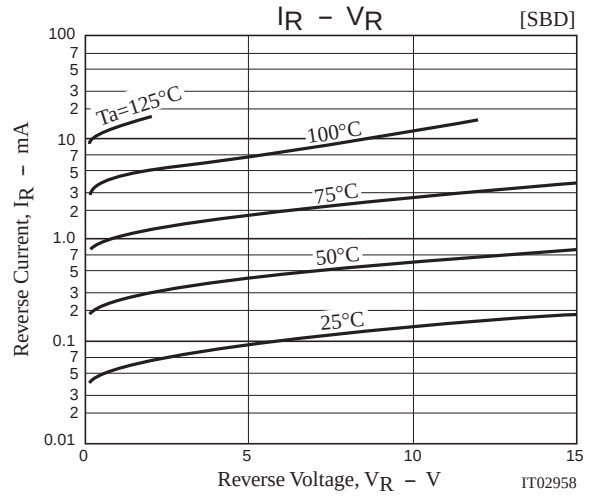
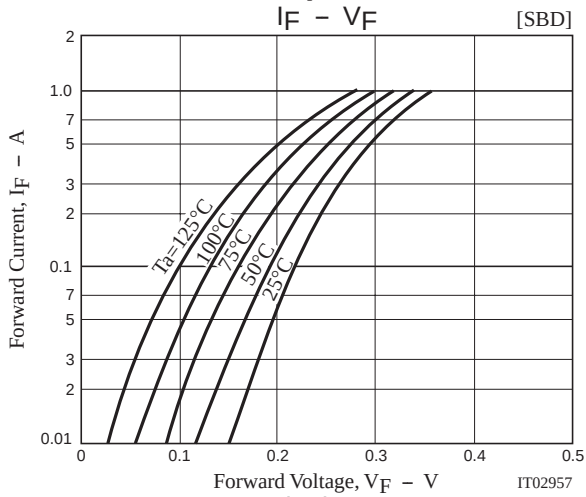
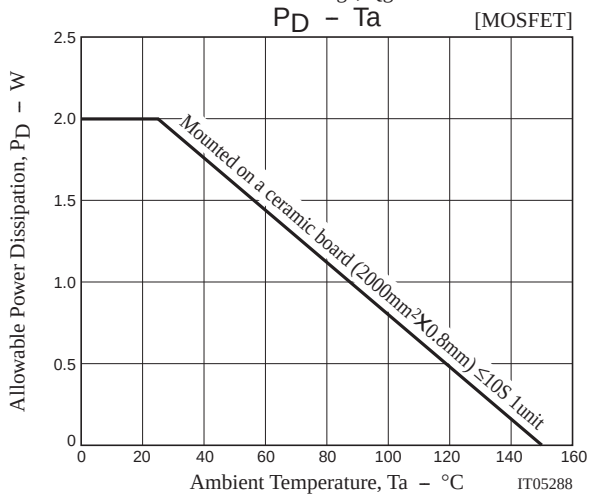
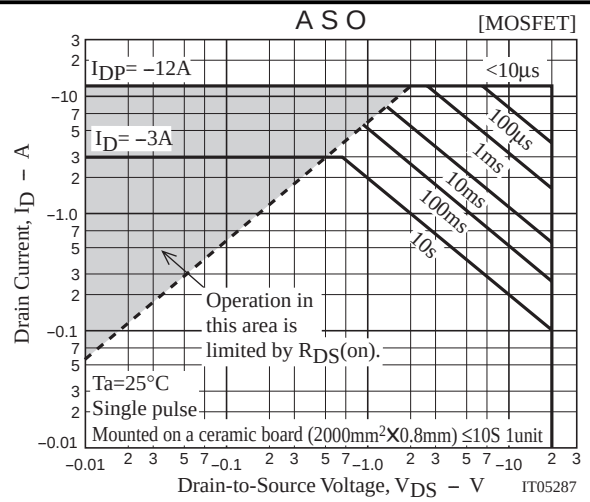
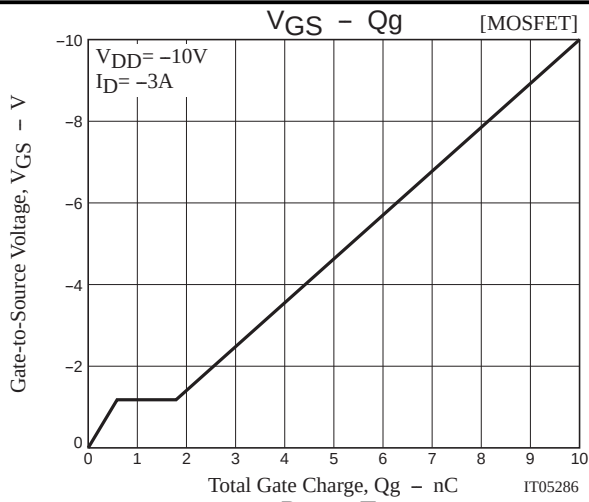
[MOSFET]

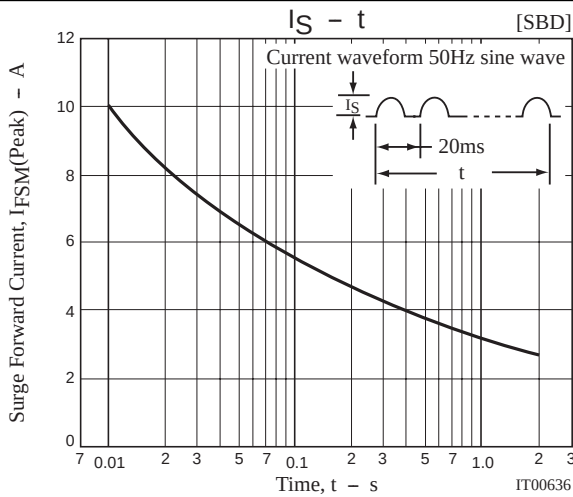
 t_{rr} Test Circuit

[SBD]









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