

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Reverse recovery time $t_{rr}=115ns$ (typ)
- Input capacitance Ciss=2200pF (typ)
- ON-resistance $R_{DS}(on)=0.28\Omega$ (typ)
- 10V drive

Specifications

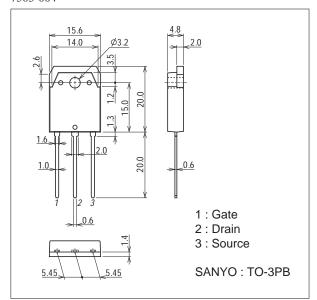
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		600	V
Gate-to-Source Voltage	VGSS		±30	V
Drain Current (DC)	ID		23	А
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	80	А
Source-to-Drain Diode Forward Current (DC)	I _{SD}		23	А
Source-to-Drain Diode Forward Current (Pulse)	ISDP	PW≤10µs, duty cycle≤1%	80	А
Allowable Power Dissipation	PD		2.5	W
		Tc=25°C	220	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	EAS		172	mJ
Avalanche Current *2	IAV		17	А

Note :*1 VDD=99V, L=1mH, IAV=17A (Fig.1) *2 L≤1mH, single pulse

Package Dimensions

unit : mm (typ) 7503-004



Product & Package Information

- Package : TO-3PB
- JEITA, JEDEC
- : SC-65, TO-247, SOT199
- Minimum Packing Quantity : 100 pcs. / tray

Marking



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Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions		Ratings		
			min	typ	max	Unit
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=10mA, VGS=0V	600			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =480V, V _{GS} =0V			100	μΑ
Gate-to-Source Leakage Current	IGSS	V _{GS} =±30V, V _{DS} =0V			±100	nA
Cutoff Voltage	VGS(off)	V _{DS} =10V, I _D =1mA	3		5	V
Forward Transfer Admittance	yfs	VDS=10V, ID=11.5A	7.5	15		S
Static Drain-to-Source On-State Resistance	R _{DS} (on)	ID=11.5A, VGS=10V		0.28	0.36	Ω
Input Capacitance	Ciss	V _{DS} =30V, f=1MHz		2200		pF
Output Capacitance	Coss	V _{DS} =30V, f=1MHz		400		pF
Reverse Transfer Capacitance	Crss	VDS=30V, f=1MHz		83		pF
Turn-ON Delay Time	t _d (on)	See Fig.2		42		ns
Rise Time	tr	See Fig.2		130		ns
Turn-OFF Delay Time	t _d (off)	See Fig.2		234		ns
Fall Time	tf	See Fig.2		84		ns
Total Gate Charge	Qg	VDS=200V, VGS=10V, ID=23A		84		nC
Gate-to-Source Charge	Qgs	V _{DS} =200V, V _{GS} =10V, I _D =23A		15.2		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =200V, V _{GS} =10V, I _D =23A		45.4		nC
Diode Forward Voltage	V _{SD}	IS=23A, VGS=0V		1.1	1.5	V
Reverse Recovery Time	t _{rr}	See Fig.3		115		ns
Reverse Recovery Charge	Q _{rr}	- ISD=23A, VGS=0V, di/dt=100A/μs		340		nC

Fig.1 Avalanche Resistance Test Circuit

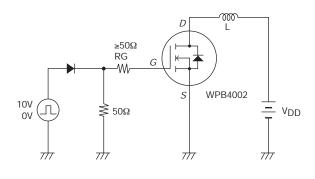


Fig.2 Switching Time Test Circuit

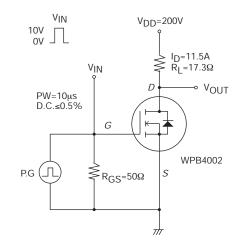
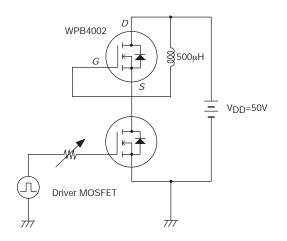
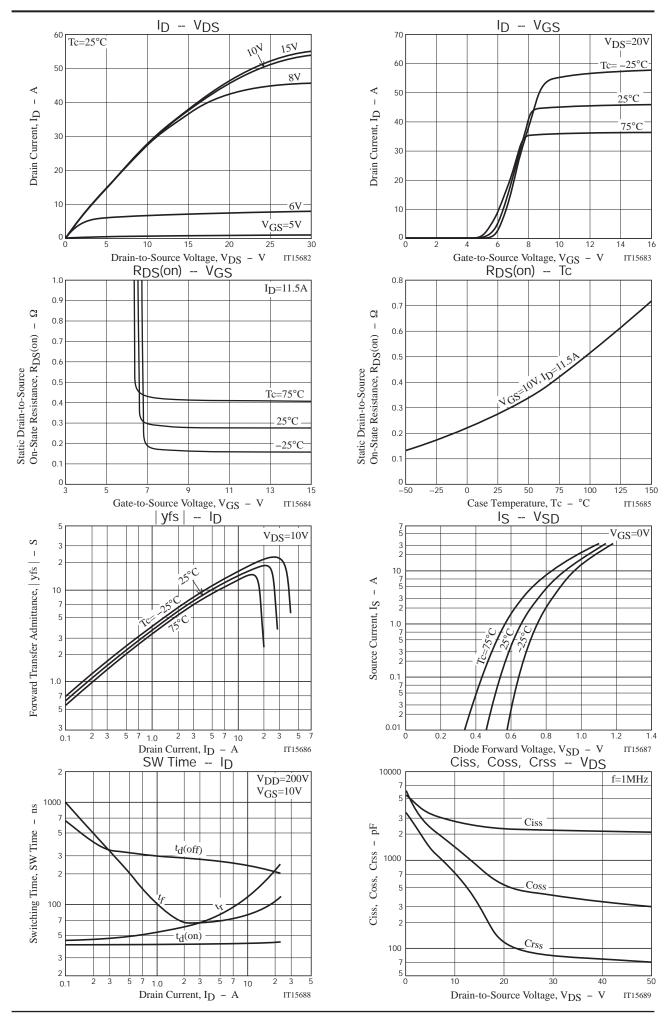
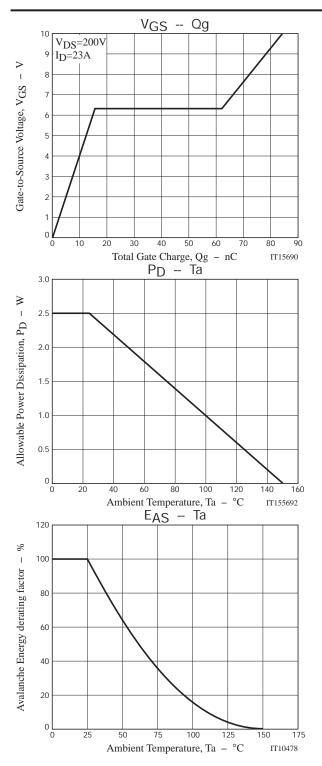


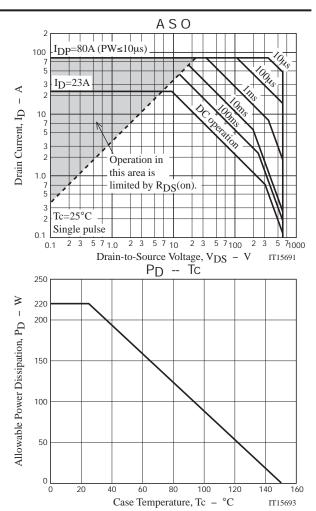
Fig.3 trr Reverse Recovery Resistance Test Circuit



WPB4002







Note on usage : Since the WPB4002 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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