MOSFET MODULE

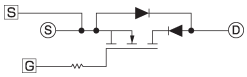
SF100CB100

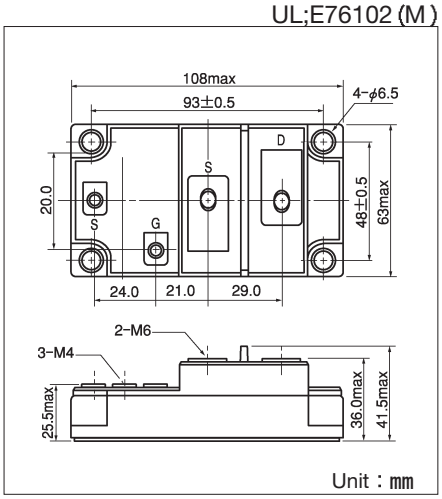
UL;E76102 (M)

SF100CB100 is a isolated power MOSFET module designed for fast swiching applications of high voltage and current. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction.

- I_D=100A, V_{DSS}=1000V
- Suitable for high speed switching applications.
- Low ON resistance.
- Wide Safe Operating Areas.
- t_{rr}≦300ns

(**Applications**)
UPS (CVCF), Motor Control, Switching Power Supply, etc.





Unit : mm

■Maximum Ratings

(Tj=25℃)

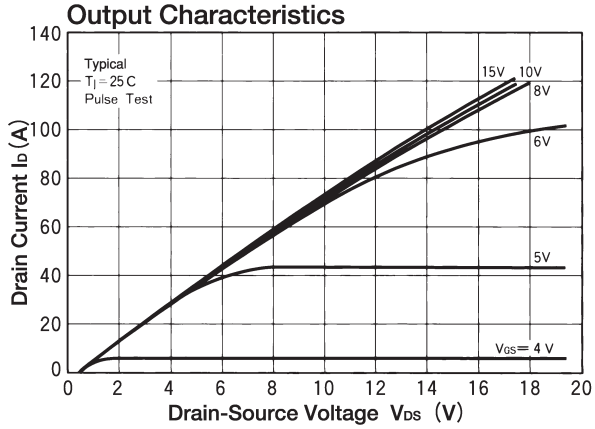
Symbol	Item		Conditions	Ratings	Unit
				SF100CB100	
V_{DSS}	Drain-Source Voltage			1000	V
V_{GSS}	Gate-Source Voltage			±30	V
I_D	Drain Current	DC		100	A
I_{DP}		Pulse		200	
$-I_D$	Reverse Drain Current			100	A
P_T	Total Power Dissipation		Tc=25℃	800	W
Tj	Channel Temperature			−40～+150	℃
Tstg	Storage Temperature			−40～+125	℃
V_{ISO}	Isolation Voltage (R.M.S.)		A.C. 1minute	2500	V
	Mounting Torque	Mounting (M6)	Recommended Value		N·m (kgf·cm)
		Terminal (M6)	Recommended Value 2.5～3.9 (25～40)	4.7 (48)	
		Terminal (M4)	Recommended Value 1.0～1.4 (10～14)	1.5 (15)	
	Mass		Typical Value	460	g

■Electrical Characteristics

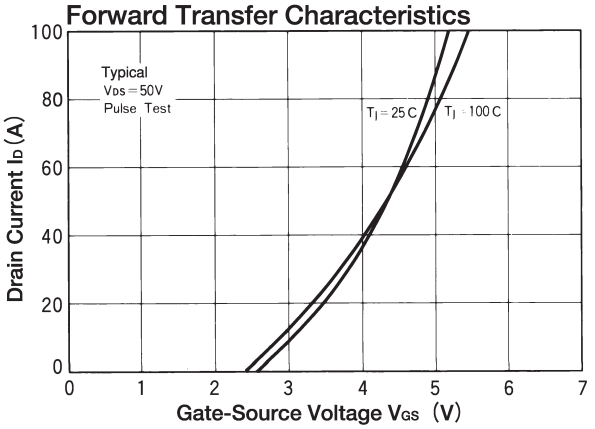
(Tj=25℃)

Symbol	Item		Conditions	Ratings			Unit
				Min.	Typ.	Max.	
I_{GSS}	Gate Leakage Current		V_{GS}=±20V, V_{DS}=0V			±1000	μA
I_{DSS}	Zero Gate Voltage Drain Current		V_{GS}=0V, V_{DS}=800V			4.0	mA
$V_{(BR)DSS}$	Darin-Source Breakdown Voltage		V_{GS}=0V, I_D=1mA	1000			V
$V_{GS(th)}$	Gate-Source Threshold Voltage		V_{DS}=V_{GS}, I_D=10mA	1.5		3.5	V
$R_{DS(on)}$	Drain-Source On-State Resistance		I_D=100A, V_{GS}=15V			150	mΩ
$V_{DS(on)}$	Drain-Source On-State Voltage		I_D=100A, V_{GS}=15V			15	V
gfs	Forward Transconductance		V_{DS}=10A, V_D=75A	30	50		S
Ciss	Input Capacitance		V_{GS}=0V, V_{DS}=25V, f=1.0MHz		16000	19200	pF
Coss	Output Capacitance		V_{GS}=0V, V_{DS}=25V, f=1.0MHz		2900	4200	pF
Crss	Reverse Transfer Capacitance		V_{GS}=0V, V_{DS}=25V, f=1.0MHz		1800	2600	pF
td(on)	Switching Time	Turn-on Delay Time	R_L=6Ω, V_{GS}=15V/−5V I_D=100A, R_G=2.2Ω			150	ns
tr		Rise Time				300	
td(off)		Turn-off Delay Time				600	
tf		Fall Time				300	
V_{SDS}	Diode Forward Voltage		$-I_D$=100A, V_{GS}=0V			1.8	V
trr	Reverse Recovery Time		$-I_S$=100A, V_{GS}=15V, di/dt=400A/μs			300	ns
Rth(j-c)	Thermal Resistance		MOSFET			0.16	℃/W
			Diode			0.64	

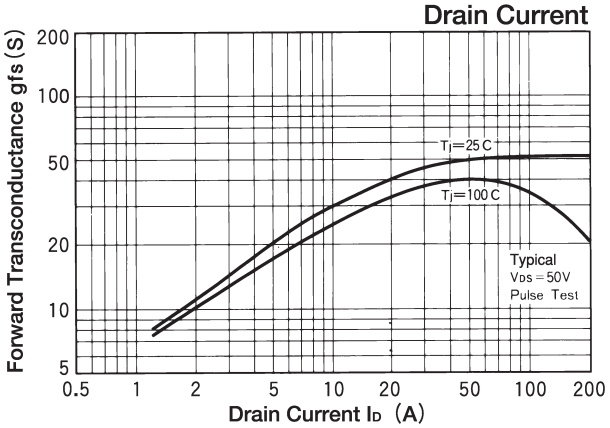
Output Characteristics



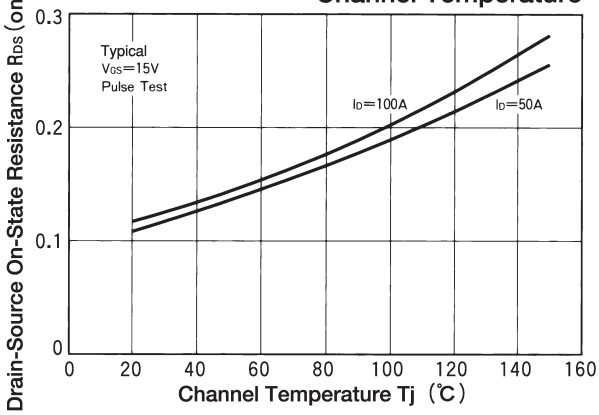
Forward Transfer Characteristics



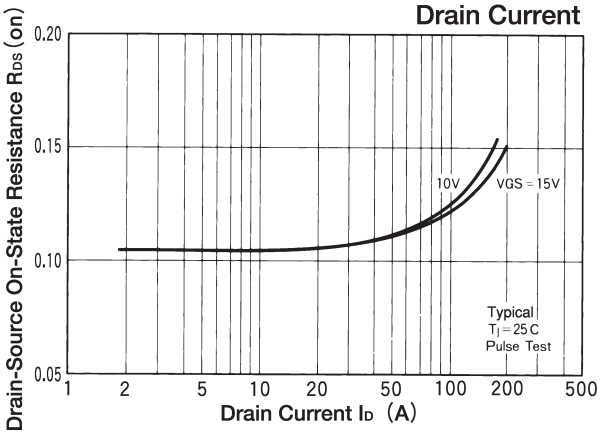
Forward Transconductance Vs. Drain Current



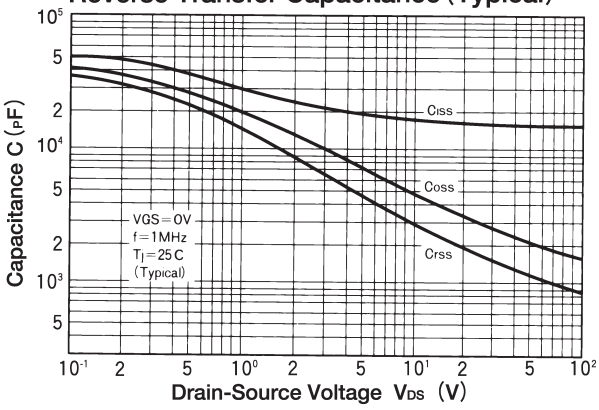
Drain-Source On-State Resistance Vs. Channel Temperature



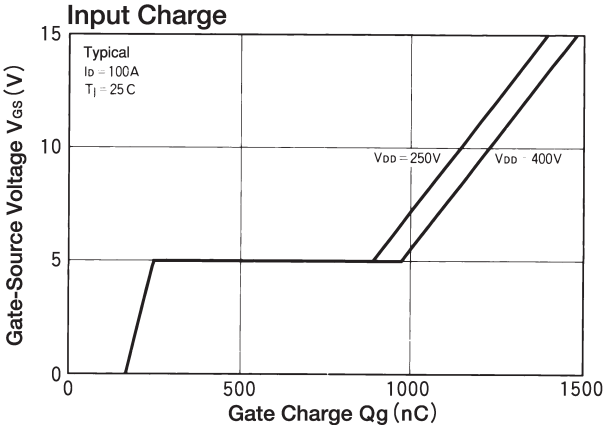
Drain-Source On-State Resistance Vs. Drain Current



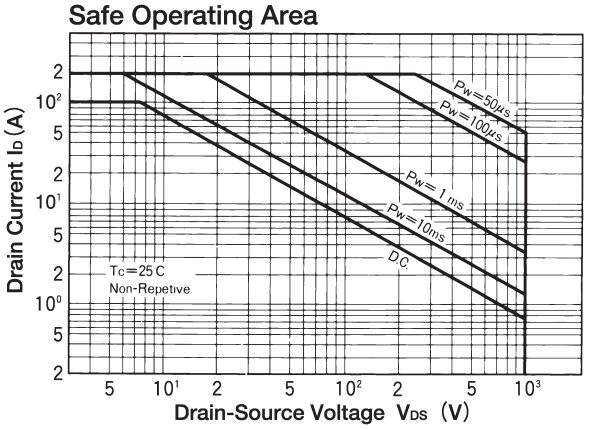
Input Capacitance, Output Capacitance, Reverse Transfer Capacitance (Typical)



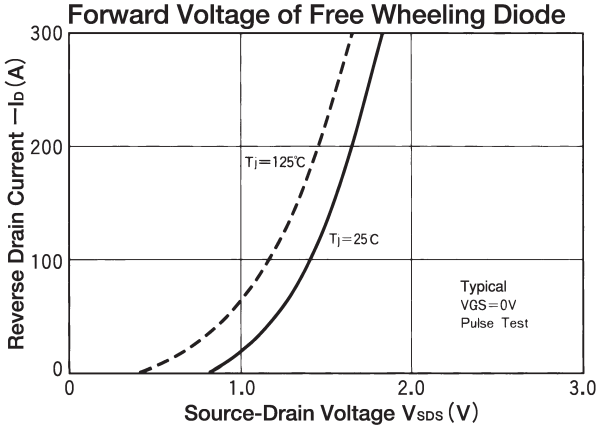
Input Charge



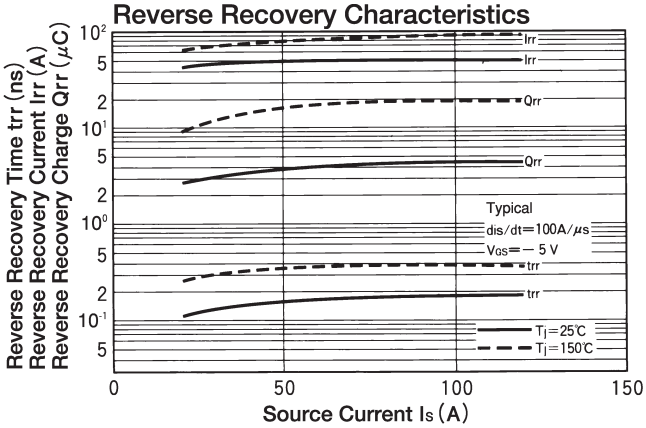
Safe Operating Area



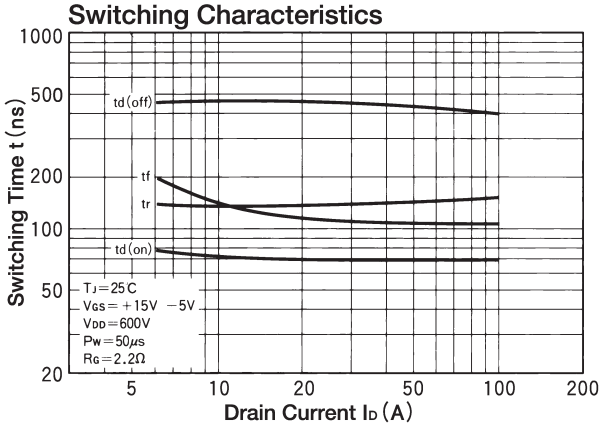
Forward Voltage of Free Wheeling Diode



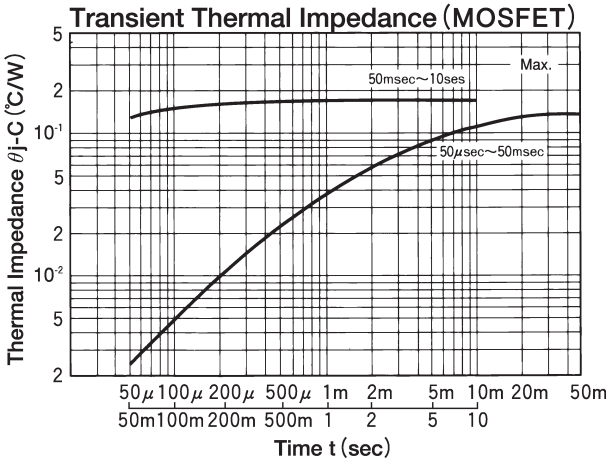
Reverse Recovery Characteristics



Switching Characteristics



Transient Thermal Impedance (MOSFET)



Transient Thermal Impedance (DIODE)