

# MOSFET MODULE

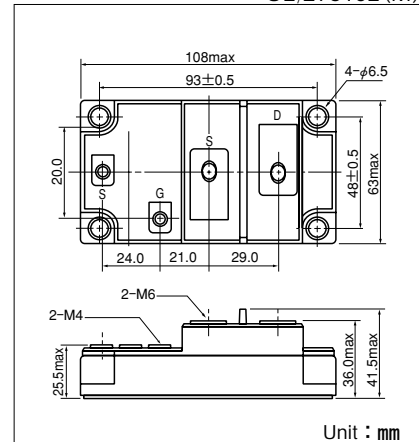
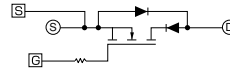
# SF100CB100

UL:E76102(M)

**SF100CB100** is a isolated power MOSFET module designed for fast swiching applications of high voltage and current with a fast recovery diode ( $t_{rr} \leq 300ns$ ) reverse connected. 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.
- $t_{rr} \leq 300ns$  fast recovery diode for free wheel

(Applications)



## Maximum Ratings

( $T_j = 25^\circ C$  unless otherwise specified)

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		
$-I_D$	Source Current			100		A
$P_T$	Total Power Dissipation		$T_c = 25^\circ C$	800		W
$T_j$	Channel Temperature			-40 to +150		$^\circ C$
$T_{stg}$	Storage Temperature			-40 to +125		$^\circ C$
$V_{iso}$	Isolation Voltage (R.M.S.)		A.C. 1minute	2500		V
	Mounting Torque	Mounting (M6)	Recommended Value 2.5-3.9 (25-40)	4.7 (48)		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

( $T_j = 25^\circ C$  unless otherwise specified)

Symbol	Item		Conditions	Ratings			Unit
				Min.	Typ.	Max.	
$I_{GSS}$	Gate Leakage Current		$V_{GS} = \pm 20V$ , $V_{DS} = 0V$			±0.1	$\mu A$
$I_{DSS}$	Zero Gate Voltage Drain Current		$V_{GS} = 0V$ , $V_{DS} = 800V$			4.0	mA
$V_{(BR)DSS}$	Drain-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
$g_{fs}$	Forward Transconductance		$V_{DS} = 10A$ , $V_D = 75A$	30	50		S
$C_{iss}$	Input Capacitance		$V_{GS} = 0V$ , $V_{DS} = 25V$ , $f = 1.0MHz$	16000	19200		pF
$C_{oss}$	Output Capacitance		$V_{GS} = 0V$ , $V_{DS} = 25V$ , $f = 1.0MHz$	2900	4200		pF
$C_{rss}$	Reverse Transfer Capacitance		$V_{GS} = 0V$ , $V_{DS} = 25V$ , $f = 1.0MHz$	1800	2600		pF
$t_{d(on)}$	Switching Time	Turn-on Delay Time	$R_L = 6\Omega$ , $V_{GS} = 15V/-5V$ $I_D = 100A$ , $R_G = 2.2\Omega$			150	ns
$t_r$		Rise Time				300	
$t_{d(off)}$		Turn-off Delay Time				600	
$t_f$		Fall Time				300	
$V_{SDS}$	Diode Forward Voltage		$-I_D = 100A$ , $V_{GS} = 0V$			1.8	V
$t_{rr}$	Reverse Recovery Time		$-I_D = 100A$ , $V_{GS} = 15V$ , $di/dt = 400A/\mu s$			300	ns
$R_{th(j-c)}$	Thermal Resistance		MOSFET			0.16	$^\circ C/W$
			Diode			0.64	

