MOSFET MODULE

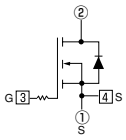
SF150BA50

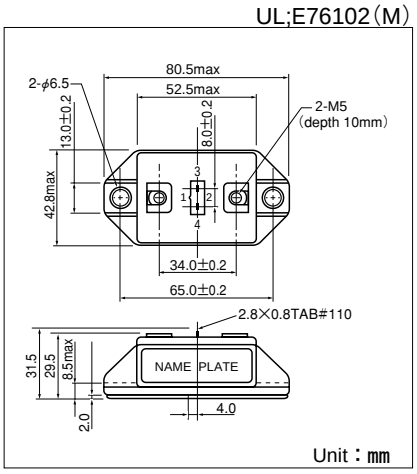
UL;E76102(M)

SF150BA50 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=150A, V_{DSS}=500V
- Suitable for high speed switching application.
- Low ON resistance.
- Wide Safe Operating Areas.

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





■Maximum Ratings

(Tj=25℃ unless otherwise specified)

Symbol	Item		Conditions	Ratings SF150BA50	Unit
V_{DSS}	Drain-Source Voltage			500	V
V_{GSS}	Gate-Source Voltage			±20	V
I_D	Drain Current	DC	Duty=35%	150	A
I_{DP}		Pulse		300	
$-I_D$	Source Current			150	A
P_T	Total Power Dissipation		Tc=25℃	780	W
Tj	Channel Temperature			−40 to +150	℃
Tstg	Storage Temperature			−40 to +125	℃
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 (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	
	Mass		Typical Value	160	g

■Electrical Characteristics

(Tj=25℃ unless otherwise specified)

Symbol	Item		Conditions	Ratings Min.	Ratings Typ.	Ratings Max.	Unit
I_{GSS}	Gate Leakage Current		V_{GS}=±20V, V_{DS}=0V			±2.0	μA
I_{DSS}	Zero Gate Voltage Drain Current		V_{GS}=0V, V_{DS}=500V			2.0	mA
$V_{(BR)DSS}$	Darin-Source Breakdown Voltage		V_{GS}=0V, I_D=1mA	500			V
$V_{GS(th)}$	Gate-Source Threshold Voltage		V_{DS}=V_{GS}, I_D=10mA	1.0		5.0	V
$R_{DS(on)}$	Drain-Source On-State Resistance		I_D=75A, V_{GS}=15V			50	mΩ
$V_{DS(on)}$	Drain-Source On-State Voltage		I_D=75A, V_{GS}=15V			3.75	V
gfs	Forward Transconductance		V_{DS}=10V, I_D=75A		80		S
Ciss	Input Capacitance		V_{GS}=0V, V_{DS}=25V, f=1.0MHz			27000	pF
Coss	Output Capacitance		V_{GS}=0V, V_{DS}=25V, f=1.0MHz			5000	pF
Crss	Reverse Transfer Capacitance		V_{GS}=0V, V_{DS}=25V, f=1.0MHz			2000	pF
td(on)	Switching Time	Turn-on Delay Time	R_L=4Ω, R_{GS}=50Ω, V_{GS}=15V I_D=75A, R_G=5Ω		90		ns
tr		Rise Time			180		
td(off)		Turn-off Delay Time			1400		
tf		Fall Time			360		
V_{SDS}	Diode Forward Voltage		−I_D=75A, V_{GS}=0V			1.5	V
trr	Reverse Recovery Time		−I_D=75A, V_{GS}=0V, di/dt=100A/μs		700		ns
Rth(j-c)	Thermal Resistance					0.16	℃/W

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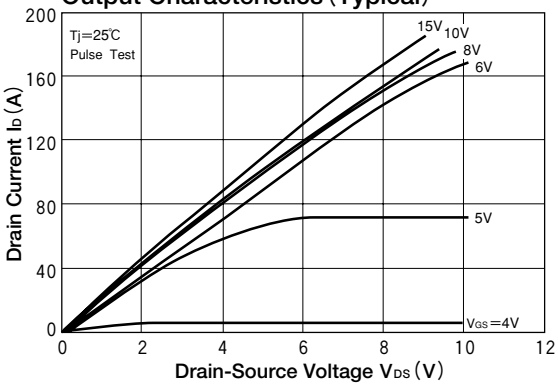
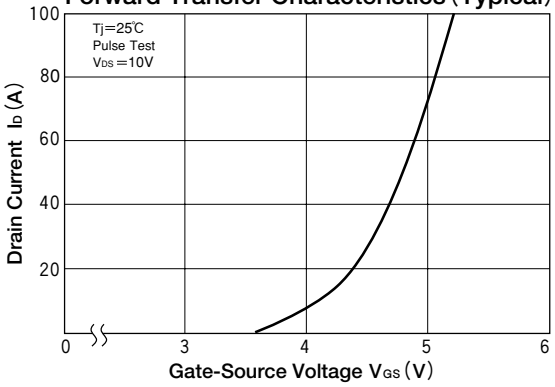
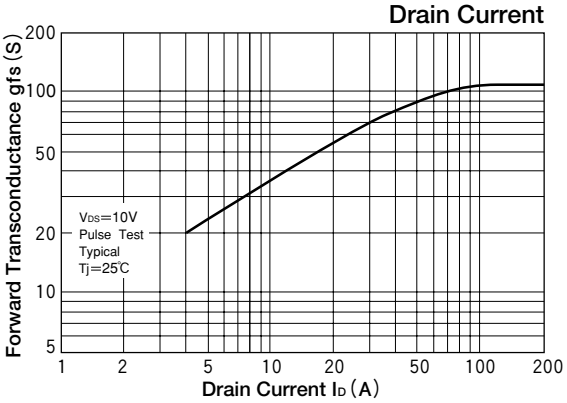
Output Characteristics (Typical)



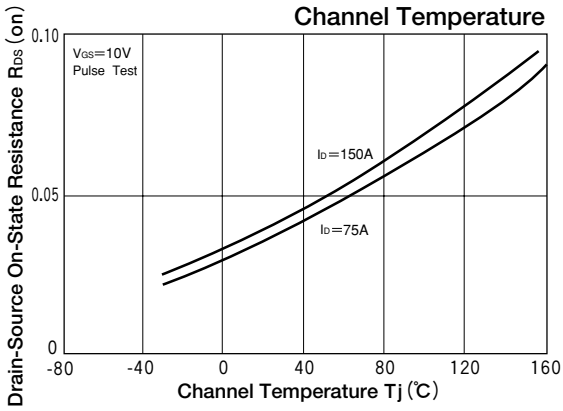
Forward Transfer Characteristics (Typical)



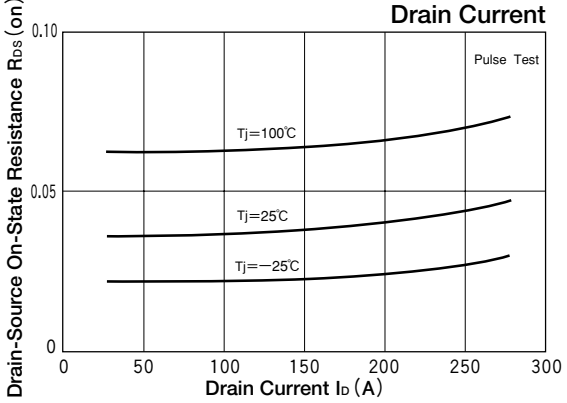
Forward Transconductance Vs. Drain Current



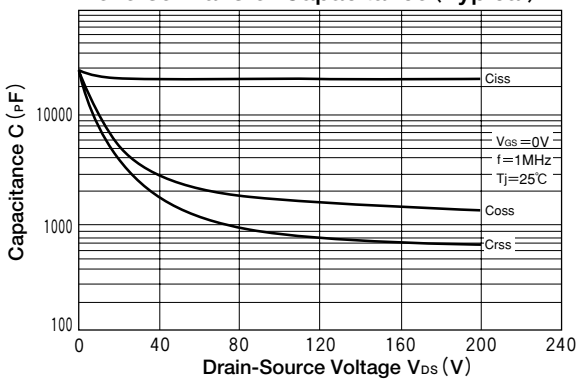
Drain-Source On-State Resistance Vs. Channel Temperature



Drain-Source On-State Resistance Vs. Drain Current



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



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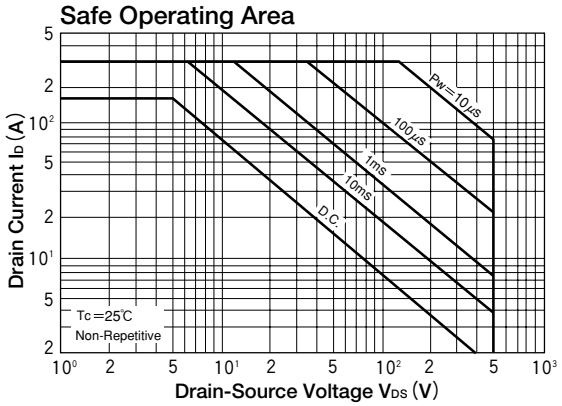

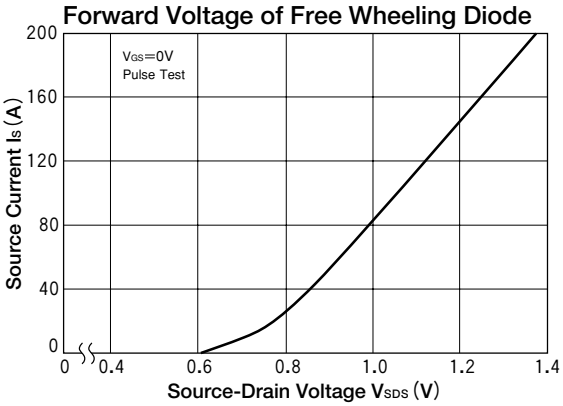

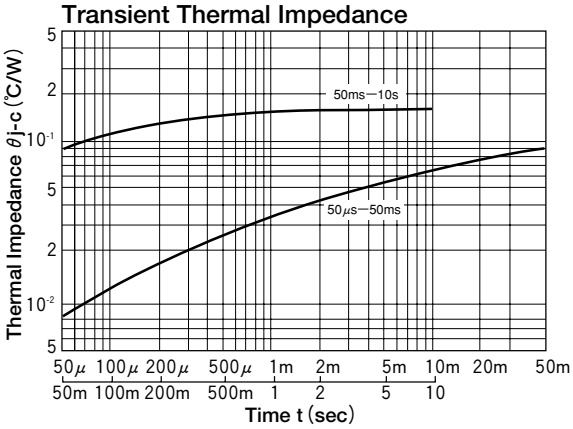

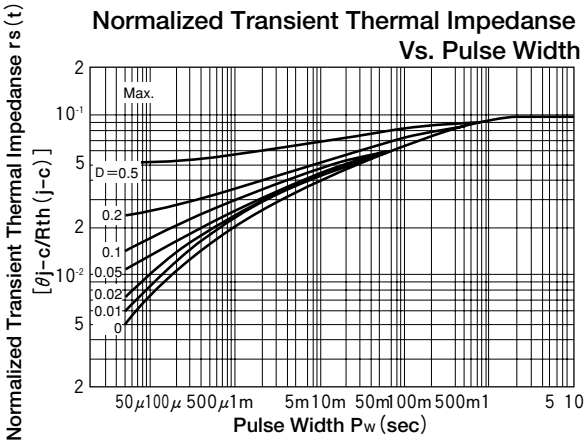

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