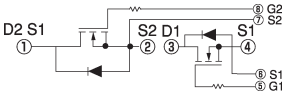
FBA75CA45/50

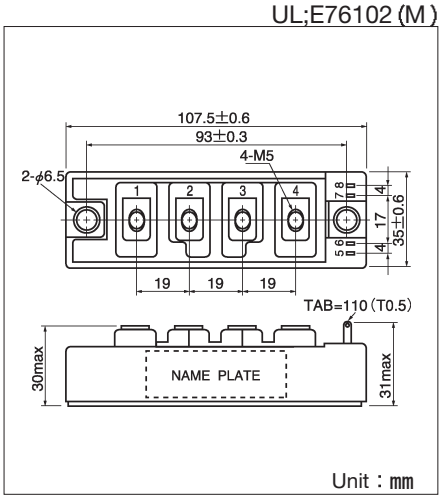
UL;E76102 (M)

FBA75CA45/50 is a dual power MOSFET module designed for fast swiching applications of high voltage and current. (2 devices are serial connected.) The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction.

- I_D=75A, V_{DSS}=500V
- Suitable for high speed switching applications.
- Low ON resistance.
- Wide Safe Operating Areas.
- t_{rr}≦700ns

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





■Maximum Ratings

(Tj=25℃)

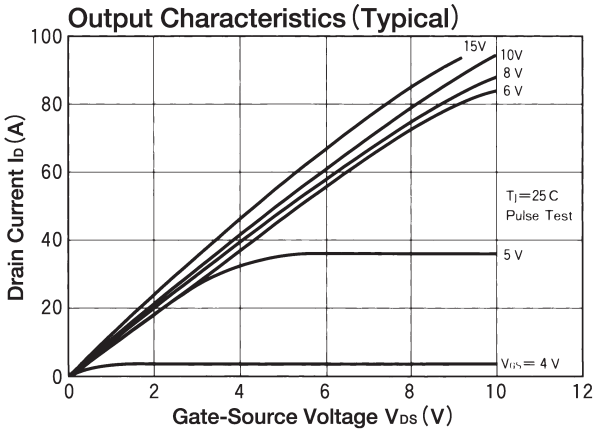
Symbol	Item		Conditions	Ratings		Unit
				FBA75CA45	FBA75CA50	
V_{DSS}	Drain-Source Voltage			450	500	V
V_{GSS}	Gate-Source Voltage			±20		V
I_D	Drain Current	D.C.	Duty=25%	75		A
I_{DP}		Pulse		150		
$-I_D$	Reverse Drain Current			75		A
P_T	Total Power Dissipation		Tc=25℃	400		W
Tj	Channel Temperature			150		℃
Tstg	Storage Temperature			−40～+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	220		g

■Electrical Characteristics

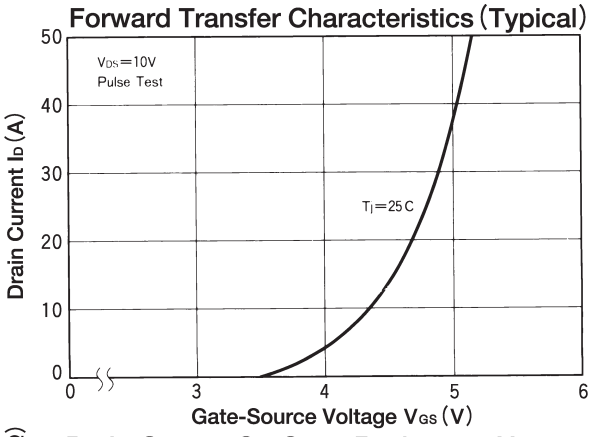
(Tj=25℃)

Symbol	Item		Conditions	Ratings			Unit
				Min.	Typ.	Max.	
I_{GSS}	Gate Leakage Current		V_{GS}=±20V, V_{DS}=0V			±1.0	μA
I_{DSS}	Zero Gate Voltage Drain Current		V_{GS}=0V, V_{DS}=500V			1.0	mA
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	FBA75CA45	V_{GS}=0V, I_D=1mA	450			V
		FBA75CA50		500			
$V_{GS(th)}$	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=40A, V_{GS}=15V			0.10	Ω
$V_{DS(on)}$	Drain-Source On-State Voltage		I_D=40A, V_{GS}=15V			4.0	V
gfs	Forward Transconductance		V_{DS}=10A, V_D=25A		40		S
Ciss	Input Capacitance		V_{GS}=0V, V_{DS}=25V, f=1.0MHz			13500	pF
Coss	Output Capacitance		V_{GS}=0V, V_{DS}=25V, f=1.0MHz			2500	pF
Crss	Reverse Transfer Capacitance		V_{GS}=0V, V_{DS}=25V, f=1.0MHz			1000	pF
td(on)	Switching Time	Turn-on Delay Time	R_L=7.5Ω, R_{GS}=50Ω, V_{GS}=15V I_D=40A, R_G=5Ω		60		ns
tr		Rise Time			120		
td(off)		Turn-off Delay Time			700		
tf		Fall Time			210		
V_{SDS}	Diode Forward Voltage		$-I_D$=40A, V_{GS}=0V			1.5	V
trr	Reverse Recovery Time		$-I_D$=40A, V_{GS}=0V, diD/dt=100A/μs		700		ns
Rth(j-c)	Thermal Resistance					0.31	℃/W

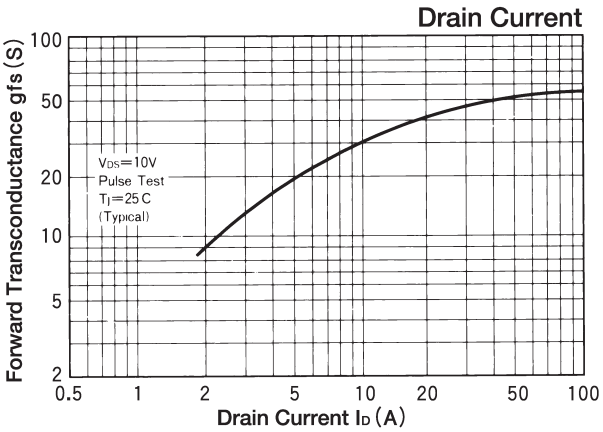
Output Characteristics (Typical)



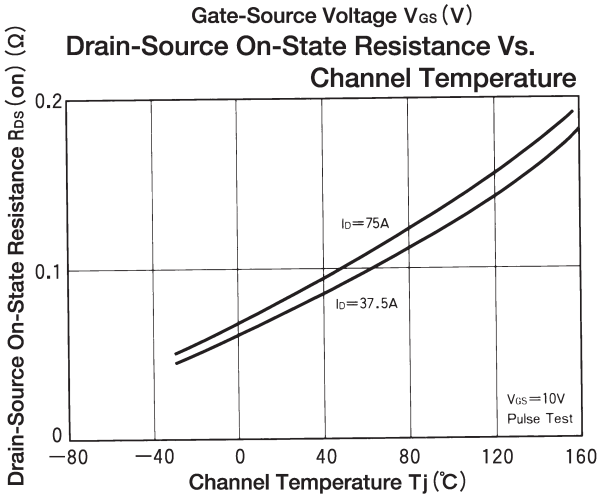
Forward Transfer Characteristics (Typical)



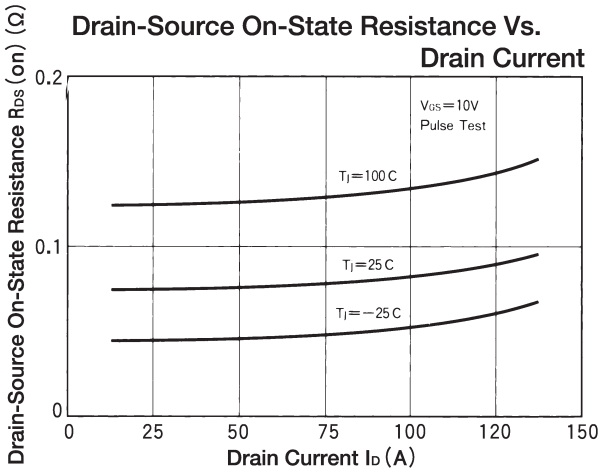
Forward Transconductance Vs. Drain Current



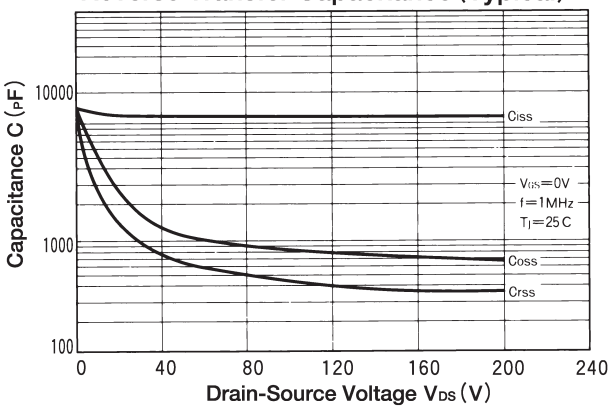
Drain-Source On-State Resistance Vs. Channel Temperature



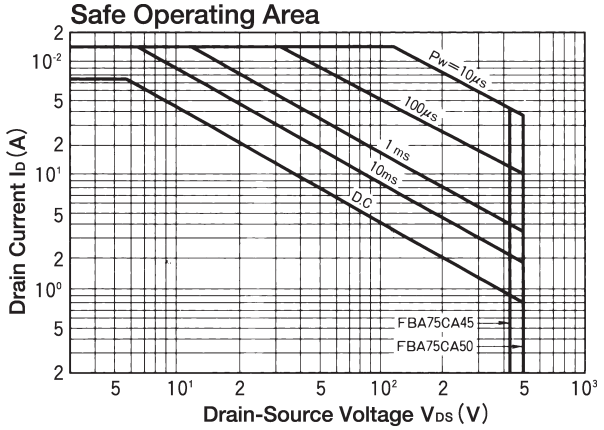
Drain-Source On-State Resistance Vs. Drain Current



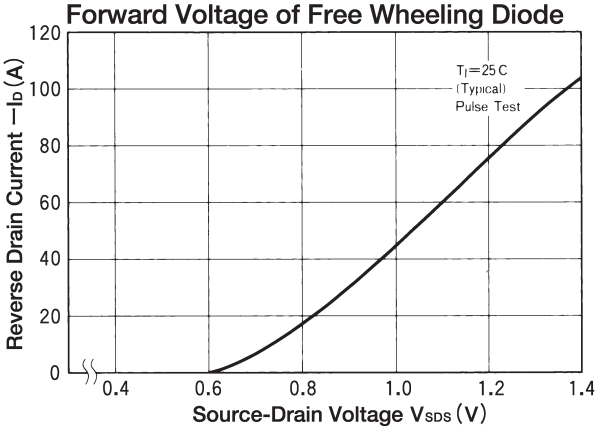
Input Capacitance, Output Capacitance, Reverse Transfer Capacitance (Typical)



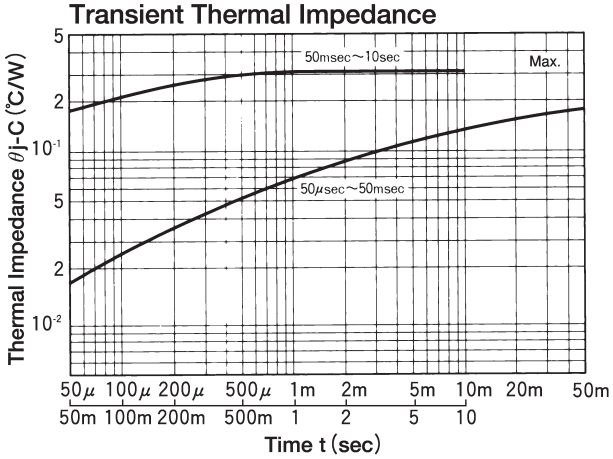
Safe Operating Area



Forward Voltage of Free Wheeling Diode



Transient Thermal Impedance



Normalized Transient Thermal Impedanse Vs. Pulse Width