

# MOSFET MODULE

# FBA75CA45/50



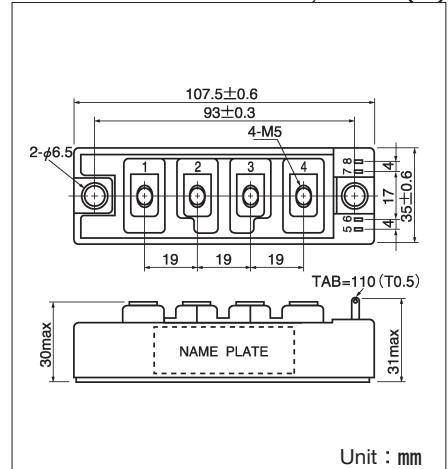
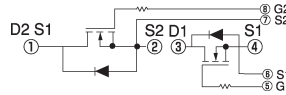
UL;E76102 (M)

**FBA75CA45/50** is a dual power MOSFET module designed for fast switching 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.

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

**(Applications)**

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



**Maximum Ratings**

( $T_j=25^\circ C$ )

Symbol	Item		Conditions	Ratings		Unit
				FBA75CA45	FBA75CA50	
$V_{DS}$	Drain-Source Voltage			450	500	V
$V_{GS}$	Gate-Source Voltage			$\pm 20$		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		$T_c=25^\circ C$	400		W
$T_j$	Channel Temperature			150		$^\circ C$
$T_{stg}$	Storage Temperature			$-40 \sim +125$		$^\circ C$
$V_{iso}$	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 (M5)	Recommended Value 1.5~2.5 (15~25)	2.7 (28)		
	Mass		Typical Value	220		g

**Electrical Characteristics**

( $T_j=25^\circ C$ )

Symbol	Item		Conditions	Ratings			Unit
				Min.	Typ.	Max.	
$I_{GSS}$	Gate Leakage Current		$V_{GS} = \pm 20V$ , $V_{DS} = 0V$			$\pm 1.0$	$\mu A$
$I_{DSS}$	Zero Gate Voltage Drain Current		$V_{GS} = 0V$ , $V_{DS} = 500V$			1.0	mA
$V_{(BR)DS}$	Drain-Source Breakdown Voltage	<b>FBA75CA45</b>	$V_{GS} = 0V$ , $I_D = 1mA$	450			V
		<b>FBA75CA50</b>		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	$\Omega$
$V_{DS(on)}$	Drain-Source On-State Voltage		$I_D = 40A$ , $V_{GS} = 15V$			4.0	V
$g_{fs}$	Forward Transconductance		$V_{DS} = 10A$ , $V_D = 25A$		40		S
$C_{iss}$	Input Capacitance		$V_{GS} = 0V$ , $V_{DS} = 25V$ , $f = 1.0MHz$			13500	pF
$C_{oss}$	Output Capacitance		$V_{GS} = 0V$ , $V_{DS} = 25V$ , $f = 1.0MHz$			2500	pF
$C_{rss}$	Reverse Transfer Capacitance		$V_{GS} = 0V$ , $V_{DS} = 25V$ , $f = 1.0MHz$			1000	pF
$t_d(on)$	Switching Time	Turn-on Delay Time	$R_L = 7.5\Omega$ , $R_{GS} = 50\Omega$ , $V_{GS} = 15V$ $I_D = 40A$ , $R_G = 5\Omega$		60		ns
$t_r$		Rise Time			120		
$t_d(off)$		Turn-off Delay Time			700		
$t_f$		Fall Time			210		
$V_{SDS}$	Diode Forward Voltage		$-I_D = 40A$ , $V_{GS} = 0V$			1.5	V
$t_{rr}$	Reverse Recovery Time		$-I_D = 40A$ , $V_{GS} = 0V$ , $di/dt = 100A/\mu s$		700		ns
$R_{th(j-c)}$	Thermal Resistance					0.31	$^\circ C/W$

