

FBA50BA45/50

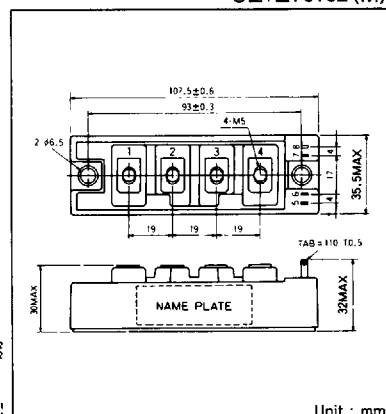
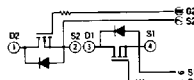
UL;E76102(M)

FBA50BA is a dual power MOSFET module designed for fast switching applications of high voltage and current. (2 devices are Separated.) The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction.

- $I_D = 50A$, $V_{OSS} = 450/500V$
- Suitable for high speed switching applications
- Low ON resistance.
- Wide Safe Operating Areas
- Isolated mounting base

(Applications)

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



Unit : mm

 $T_j = 25^\circ\text{C}$

Maximum Ratings

Symbol	Item		Conditions	Ratings		Unit
				FBA50BA45	FBA50BA50	
V _{DSS}	Drain-Source Voltage			450	500	V
V _{GSS}	Gate-Source Voltage			± 20		V
I _D	Drain Current	DC		50		A
I _{DP}		Pulse		100		
− I _D	Reverse Drain Current			50		A
P _T	Total Power Dissipation		T _c = 25°C	320		W
T _j	Channel Temperature			150		°C
T _{stg}	Storage Temperature			− 40 ~ + 125		°C
V _{ISO}	Isolation Voltage(R.M.S)		A.C. 1minute	2500		V
	Mounting Torque	(M6)	Recommended Value 20~40kgf•cm	50		kgf•cm
		Terminal (M5)	Recommended Value 15~24kgf•cm	30		
	Mass		Typical value	220		g

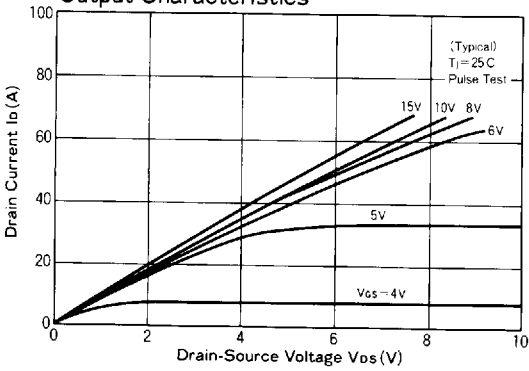
■Electrical Characteristics

 $T_j = 25^{\circ}\text{C}$

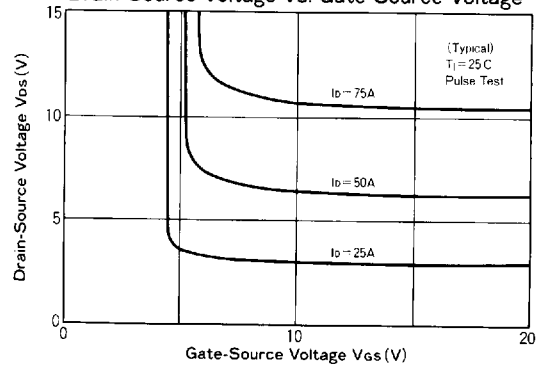
Symbol	Item		Conditions	Ratings			Unit
				Min.	Typ.	Max.	
I_{GSS}	Gate Leakage Current		$V_{GS} = \pm 20V, V_{DS} = 0V$			± 500	nA
I_{DSS}	Zero Gate Voltage Drain Current		$V_{GS} = 0V, V_{DS} = V_{DSS}$			1.0	mA
$V_{(BR)DSS}$	Drain-Source	FBA50BA45	$V_{GS} = 0V, I_D = 1mA$	450			V
	Breakdown Voltage	FBA50BA50		500			
$V_{GS(th)}$	Gate-Source Threshold Voltage		$V_{DS} = V_{GS}, I_D = 10mA$	1.5		4.0	V
$R_{DS(on)}$	Drain-Source On-State Resistance		$I_D = 25A, V_{GS} = 15V$			0.12	Ω
$V_{DS(on)}$	Drain-Source On-State Voltage		$I_D = 25A, V_{GS} = 15V$			3.0	V
g_{fs}	Forward Transconductance		$V_{DS} = 10V, I_D = 25A$		30		S
C_{iss}	Input Capacitance		$V_{GS} = 0V, V_{DS} = 25V, f = 1.0MHz$			9000	pF
C_{oss}	Output Capacitance		$V_{GS} = 0V, V_{DS} = 25V, f = 1.0MHz$			1800	pF
C_{rss}	Reverse Transfer Capacitance		$V_{GS} = 0V, V_{DS} = 25V, f = 1.0MHz$			600	pF
$t_{d(on)}$	Switching Time	Turn-on Delay Time	$R_L = 12\Omega, R_{GS} = 50\Omega, V_{GS} = 15V,$ $I_D = 25A, R_G = 10\Omega$		60		ns
t_r		Rise Time			60		
$t_{d(off)}$		Turn-off Delay Time			650		
t_f		Fall Time			130		
V_{SDS}	Source-Drain Voltage		$-I_D = 25A, V_{GS} = 0V$			1.5	V
t_{rr}	Reverse Recovery Time		$-I_D = 25A, V_{GS} = 0V, di/dt = 100A/\mu s$		700		ns
$R_{th(j-c)}$	Thermal Resistance					0.39	$^{\circ}C/W$

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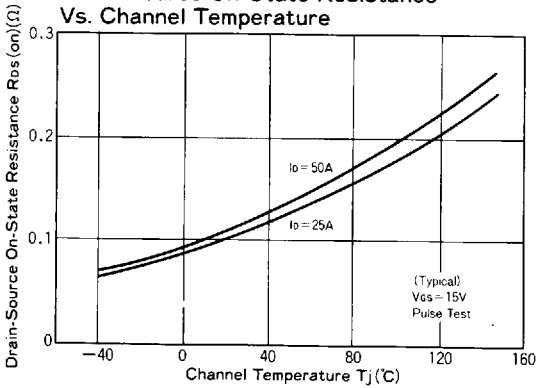
Output Characteristics



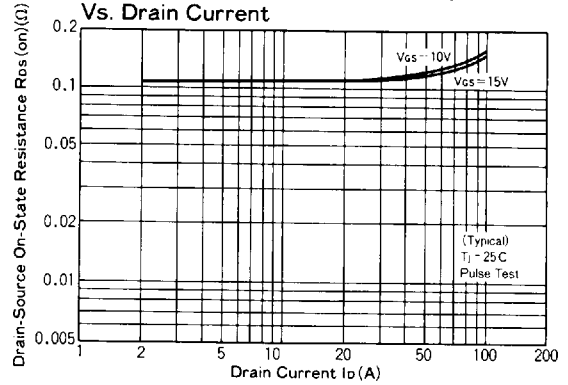
Drain-Source Voltage Vs. Gate-Source Voltage



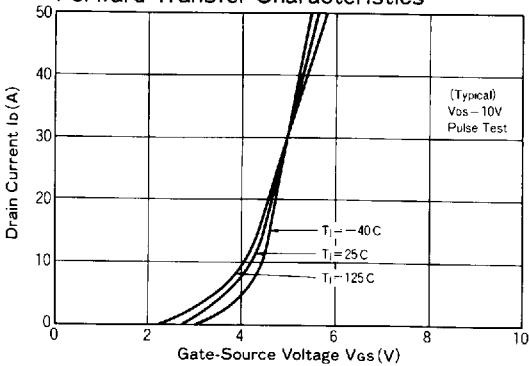
Drain-Source On-State Resistance Vs. Channel Temperature



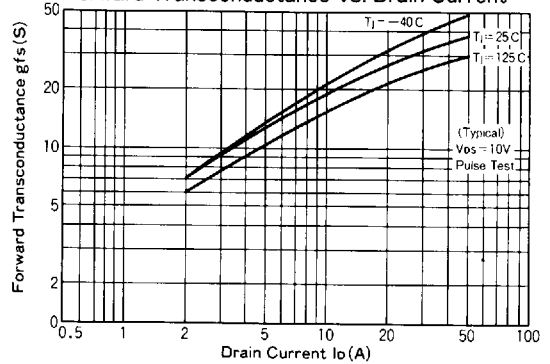
Drain-Source On-State Resistance Vs. Drain Current



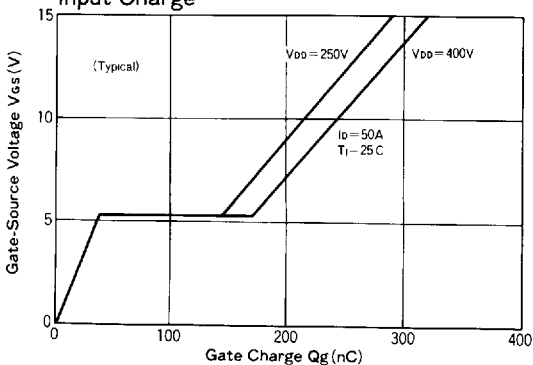
Forward Transfer Characteristics



Forward Transconductance Vs. Drain Current



Input Charge



Input Capacitance, Output Capacitance, Reverse Transfer Capacitance

