

PW39KF1-3

20V P-Channel MOSFET

-0.66A -20V; $R_{DS(ON)typ}=430m\Omega@-4.5V$, $R_{DS(ON)typ}=620m\Omega@-2.5V$,
 $R_{DS(ON)typ}=950m\Omega@-1.8V$.

FEATURE

- Surface Mount Package
- P-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected

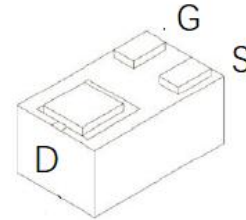
Application

- Load/Power Switching
- Interfacing, Logic Switching
- Battery Management for Ultra Small Portable Electronics

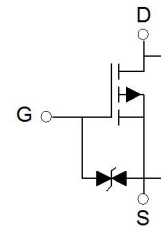
MARKING:



WBFBP-03E



Schematic diagram



ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

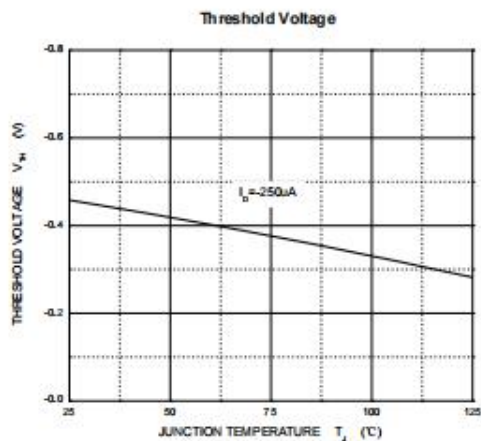
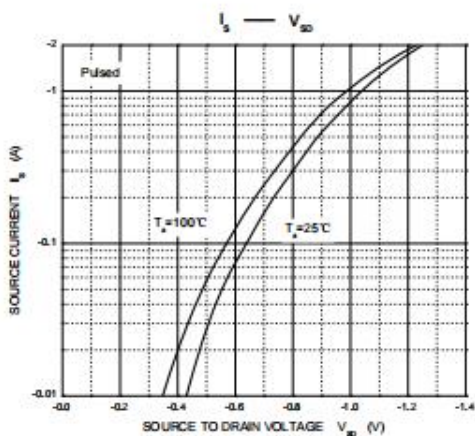
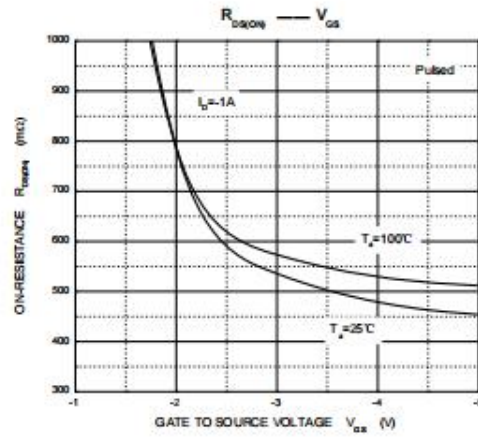
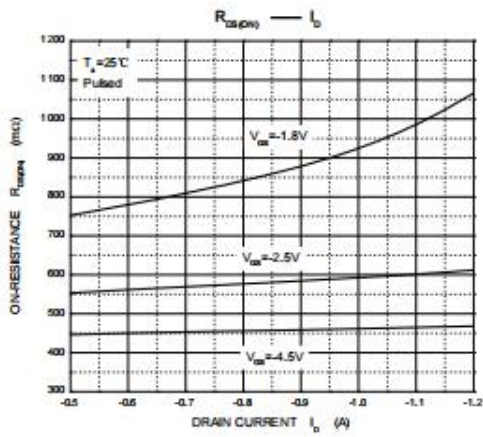
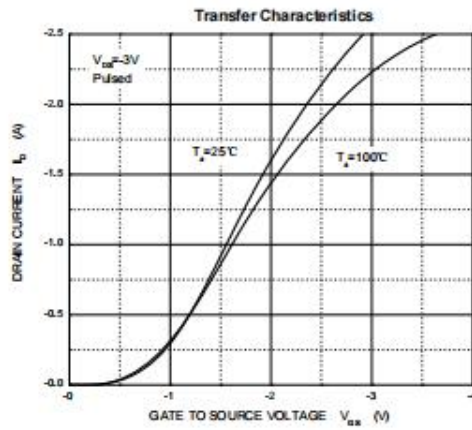
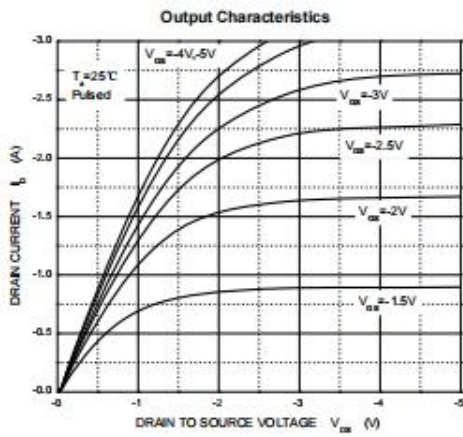
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ⁽¹⁾	I_D	-0.66	A
Pulsed Drain Current($t_p=10\mu s$)	I_{DM}	-1.2	A
Power Dissipation ⁽¹⁾	P_D	100	mW
Thermal Resistance from Junction to Ambient ⁽¹⁾	$R_{\theta JA}$	1250	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	

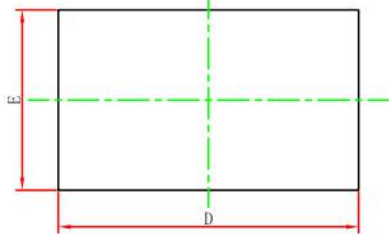
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±20	μA
Gate threshold voltage ⁽²⁾	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.35		-1.1	V
Drain-source on-resistance ⁽²⁾	R _{DSON}	V _{GS} = -4.5V, I _D = -0.1A		430	560	mΩ
		V _{GS} = -2.5V, I _D = -0.1A		620	800	
		V _{GS} = -1.8V, I _D = -0.1A		950		
Forward transconductance ⁽²⁾	g _{FS}	V _{DS} = -10V, I _D = -0.54A	0.5			S
DYNAMIC CHARACTERISTICS⁽⁴⁾						
Input Capacitance	C _{iss}	V _{DS} = -16V, V _{GS} = 0V, f = 1MHz		74		pF
Output Capacitance	C _{oss}			16		
Reverse Transfer Capacitance	C _{rss}			12		
SWITCHING CHARACTERISTICS⁽²⁾						
Turn-on delay time ⁽³⁾	t _{d(on)}	V _{DS} = -10V, I _D = -200mA, V _{GS} = -4.5V, R _G = 10Ω		9		nS
Turn-on rise time ⁽³⁾	t _r			5.7		
Turn-off delay time ⁽³⁾	t _{d(off)}			32.6		
Turn-off fall time ⁽³⁾	t _f			20.3		
SOURCE-DRAIN DIODE CHARACTERISTICS						
Diode Forward voltage	V _{DS}	I _S = -0.1A, V _{GS} = 0V		-0.79	-1.2	V

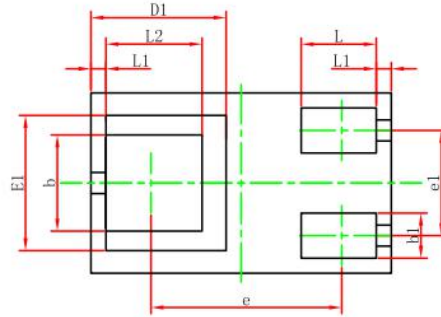
Notes :

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width = 300 μs, Duty Cycle = 2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producing.

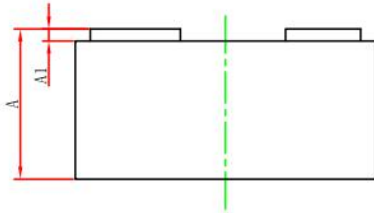




TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.100	0.000	0.004
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.450REF.		0.018REF.	
E1	0.450REF.		0.018REF.	
b	0.270	0.370	0.011	0.015
b1	0.100	0.200	0.004	0.008
e	0.635REF.		0.025REF.	
e1	0.300	0.400	0.012	0.016
L	0.200	0.300	0.008	0.012
L1	0.050REF.		0.002REF.	
L2	0.270	0.370	0.011	0.015