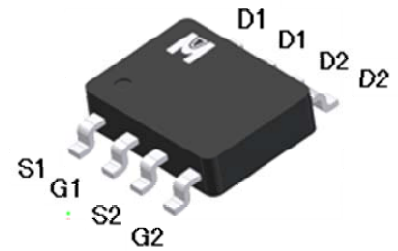
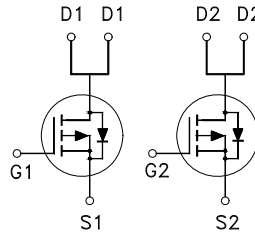


P-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

$BV_{DSS}$	-20V
$R_{DS(on)} (MAX.)$	20m $\Omega$
$I_D$	-8.5A



Pb-Free Lead Plating & Halogen Free



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$  Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$T_A = 25^\circ\text{C}$	$I_D$	-8.5	A
	$T_A = 70^\circ\text{C}$		-6	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	-34	
Power Dissipation	$T_A = 25^\circ\text{C}$	$P_D$	2	W
	$T_A = 70^\circ\text{C}$		1.28	
Operating Junction & Storage Temperature Range		$T_{j}, T_{stg}$	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNIT
Junction-to-Case	$R_{\theta JC}$		25	$^\circ\text{C} / \text{W}$
Junction-to-Ambient <sup>3</sup>	$R_{\theta JA}$		62.5	

<sup>1</sup>Pulse width limited by maximum junction temperature.

<sup>2</sup>Duty cycle  $\leq 1\%$

<sup>3</sup>62.5 $^\circ\text{C} / \text{W}$  when mounted on a 1 in<sup>2</sup> pad of 2 oz copper.

ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ , Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT		
			MIN	TYP	MAX			
<b>STATIC</b>								
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V		
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.75	-1.2			
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 12V$			$\pm 100$	nA		
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -16V, V_{GS} = 0V$			-1	$\mu A$		
		$V_{DS} = -12V, V_{GS} = 0V, T_J = 125\text{ }^\circ\text{C}$			-10			
On-State Drain Current <sup>1</sup>	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -4.5V$	-8.5			A		
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -8.5A$		15	20	m $\Omega$		
		$V_{GS} = -2.5V, I_D = -4.5A$		19	25			
		$V_{GS} = -1.8V, I_D = -2.5A$		26	40			
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = -5V, I_D = -8.5A$		22		S		
<b>DYNAMIC</b>								
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = -10V, f = 1MHz$		3050		pF		
Output Capacitance	$C_{oss}$			460				
Reverse Transfer Capacitance	$C_{rss}$			410				
Total Gate Charge <sup>1,2</sup>	$Q_g(V_{GS}=-4.5V)$	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -8.5A$		27		nC		
	$Q_g(V_{GS}=-2.5V)$			16.5				
Gate-Source Charge <sup>1,2</sup>	$Q_{gs}$			2.2				
Gate-Drain Charge <sup>1,2</sup>	$Q_{gd}$			6.8				
Turn-On Delay Time <sup>1,2</sup>	$t_{d(on)}$		$V_{DS} = -10V, I_D = -1A, V_{GS} = -4.5V, R_{GS} = 6\Omega$		20			nS
Rise Time <sup>1,2</sup>	$t_r$				50			
Turn-Off Delay Time <sup>1,2</sup>	$t_{d(off)}$			90				
Fall Time <sup>1,2</sup>	$t_f$			60				
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_C = 25\text{ }^\circ\text{C}</math>)</b>								
Continuous Current	$I_S$				-2.3	A		
Pulsed Current <sup>3</sup>	$I_{SM}$				-9.2			
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = I_S, V_{GS} = 0V$			-1.2	V		

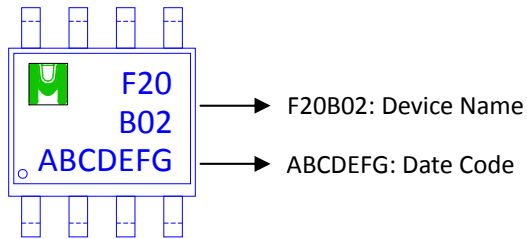
<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu\text{sec}$ , Duty Cycle  $\leq 2\%$ .

<sup>2</sup>Independent of operating temperature.

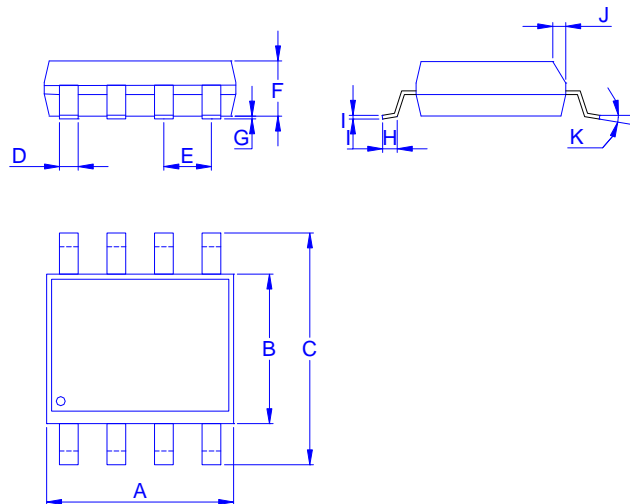
<sup>3</sup>Pulse width limited by maximum junction temperature.

Ordering & Marking Information:

Device Name: EMF20B02G for SOP-8



Outline Drawing



Dimension in mm

Dimension	A	B	C	D	E	F	G	H	I	J	K
Min.	4.70	3.70	5.80	0.33		1.20	0.08	0.40	0.19	0.25	0°
Typ.					1.27						
Max.	5.10	4.10	6.20	0.51		1.62	0.28	0.83	0.26	0.50	8°



TYPICAL CHARACTERISTICS

