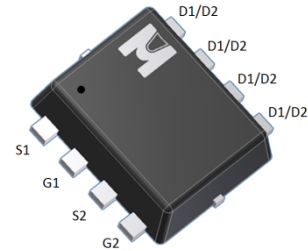
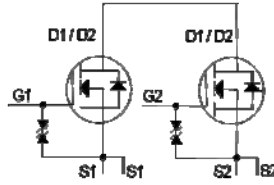


Dual N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

$BV_{DSS}$	20V
$R_{DS(on)}$ (MAX.)	20m $\Omega$
$I_D$	8A



Pb-Free Lead Plating & Halogen Free

ESD Protection



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	$I_D$	8	A
	$T_A = 70\text{ }^\circ\text{C}$		6.5	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	40	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	$P_D$	2.1	W
	$T_A = 70\text{ }^\circ\text{C}$		1.3	
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-Ambient <sup>3</sup> ( $t \leq 10s$ )	$R_{\theta JA}$		60	$^\circ\text{C} / \text{W}$
Junction-to-Ambient <sup>3</sup>	$R_{\theta JA}$		105	

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

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

<sup>3</sup>The value of  $R_{\theta JA}$  is measured with the device 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	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 12V$			$\pm 10$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			1	$\mu A$
		$V_{DS} = 16V, V_{GS} = 0V, T_J = 125\text{ }^\circ\text{C}$			10	
On-State Drain Current <sup>1</sup>	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 4.5V$	10			A
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 6A$		15	20	m $\Omega$
		$V_{GS} = 2.5V, I_D = 5.5A$		18	24	
		$V_{GS} = 1.8V, I_D = 5A$		29	39	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 6A$		12		S
<b>DYNAMIC</b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$		941		pF
Output Capacitance	$C_{oss}$			136		
Reverse Transfer Capacitance	$C_{rss}$			122		
Total Gate Charge <sup>1,2</sup>	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 6A$		11.5		nC
Gate-Source Charge <sup>1,2</sup>	$Q_{gs}$			1.2		
Gate-Drain Charge <sup>1,2</sup>	$Q_{gd}$			3.9		
Turn-On Delay Time <sup>1,2</sup>	$t_{d(on)}$	$V_{DS} = 10V, I_D = 1A, V_{GS} = 4.5V, R_{GS} = 6\Omega$		10		nS
Rise Time <sup>1,2</sup>	$t_r$			15		
Turn-Off Delay Time <sup>1,2</sup>	$t_{d(off)}$			40		
Fall Time <sup>1,2</sup>	$t_f$			18		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_C = 25\text{ }^\circ\text{C}</math>)</b>						
Continuous Current	$I_S$				2	A
Pulsed Current <sup>3</sup>	$I_{SM}$				8	
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 6A, V_{GS} = 0V$		0.78	1.1	V

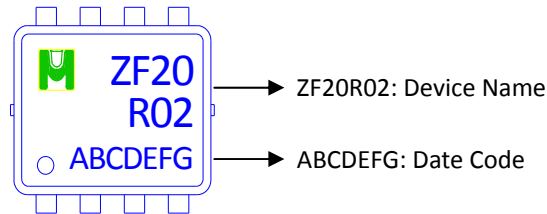
<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu\text{sec}$ , Duty Cycle  $\leq 2\%$ .

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

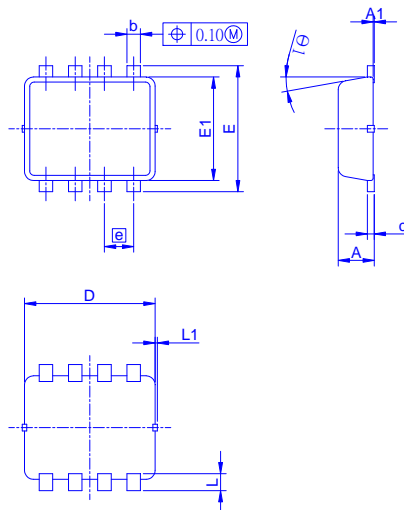
<sup>3</sup>Pulse width limited by maximum junction temperature.

Ordering & Marking Information:

Device Name: EMZF20R02W for DFN 3 x 3



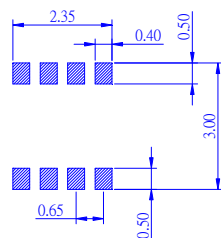
Outline Drawing



Dimension in mm

Dimension	A	A1	b	c	D	E	E1	e	L	L1	$\theta 1$
Min.	0.70	0	0.24	0.08					0.20	0	0°
Typ.	0.80		0.30	0.152	2.90	2.80	2.30	0.65	0.375		10°
Max.	0.90	0.05	0.35	0.25					0.45	0.10	12°

Recommended minimum pads





TYPICAL CHARACTERISTICS

