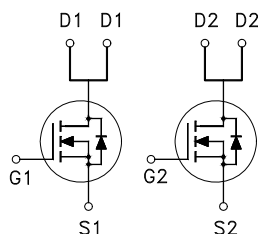


Dual N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV_{DSS}	250V
$R_{DS(on)} (MAX.)$	1.7Ω
I_D	0.5A



Rg 100% Tested

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}	± 20	V
Continuous Drain Current	$T_A = 25^\circ\text{C}$	I_D	0.5	A
	$T_A = 100^\circ\text{C}$		0.3	
Pulsed Drain Current ¹		I_{DM}	2	
Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	2	W
	$T_A = 70^\circ\text{C}$		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-Case	$R_{\theta JC}$		25	$^\circ\text{C} / \text{W}$
Junction-to-Ambient ³	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

³62.5 $^\circ\text{C} / \text{W}$ when mounted on a 1 in² pad of 2 oz copper.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	250			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	2.0	3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 200V, V_{GS} = 0V$			1	μA
		$V_{DS} = 200V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			25	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 10V, V_{GS} = 10V$	0.5			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 0.25A$		1.35	1.7	m Ω
		$V_{GS} = 5V, I_D = 0.15A$		1.5	2.0	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 50V, I_D = 0.25A$		2.0		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		680		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			13		
Gate Resistance	R_g	$V_{GS} = 15mV, V_{DS} = 0V, f = 1MHz$		3.0		Ω
Total Gate Charge ^{1,2}	Q_g	$V_{DS} = 200V, V_{GS} = 10V,$ $I_D = 0.25A$		17.8		nC
Gate-Source Charge ^{1,2}	Q_{gs}			2.2		
Gate-Drain Charge ^{1,2}	Q_{gd}			4.4		
Turn-On Delay Time ^{1,2}	$t_{d(on)}$	$V_{DS} = 125V,$ $I_D = 0.1A, V_{GS} = 10V, R_G = 6\Omega$		10		nS
Rise Time ^{1,2}	t_r			40		
Turn-Off Delay Time ^{1,2}	$t_{d(off)}$			12		
Fall Time ^{1,2}	t_f			20		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _C = 25 °C)						
Continuous Current	I_S				0.5	A
Pulsed Current ³	I_{SM}				2	
Forward Voltage ¹	V_{SD}	$I_F = I_S, V_{GS} = 0V$			1.3	V

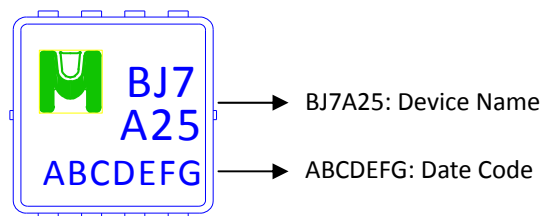
¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

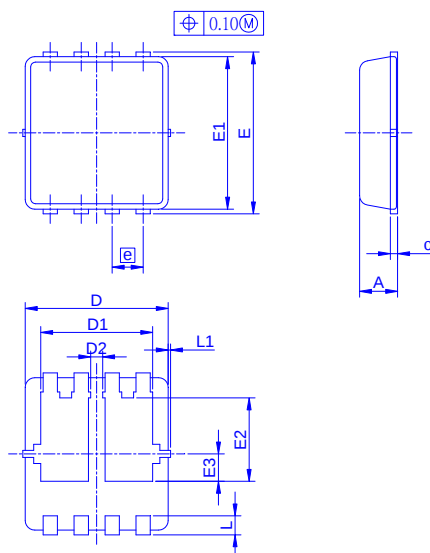
³Pulse width limited by maximum junction temperature.

Ordering & Marking Information:

Device Name: EMBJ7A25V for EDFN 3 x 3



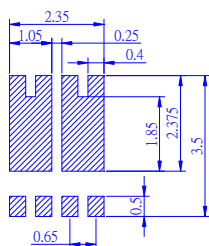
Outline Drawing



Dimension in mm

Dimension	A	A1	b	c	D	D1	D2	E	E1	E2	E3	e	L	L1	Θ1
Min.	0.70	0	0.24	0.10	2.95	2.25		3.15	2.95	1.65			0.30	0	0°
Typ.	0.80		0.30	0.152	3.00	2.35	0.225	3.20	3.00	1.75	0.575	0.65	0.40		10°
Max.	0.90	0.05	0.35	0.25	3.05	2.45		3.25	3.05	1.85			0.50	0.10	12°

Recommended minimum pads





TYPICAL CHARACTERISTICS

