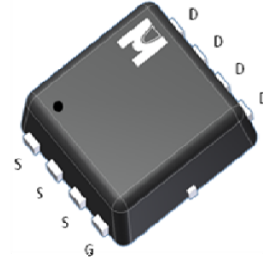


N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV_{DSS}	60V
$R_{DS(on)}$ (MAX.)	16m Ω
I_D	15A



UIS, Rg 100% Tested

Pb-Free Lead Plating & Halogen Free



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	15	A
	$T_A = 100\text{ }^\circ\text{C}$		11	
Pulsed Drain Current ¹		I_{DM}	60	
Avalanche Current		I_{AS}	15	
Avalanche Energy	$L = 0.1\text{mH}$, $I_D = 15\text{A}$, $R_G = 25\Omega$	E_{AS}	11.25	mJ
Repetitive Avalanche Energy ²	$L = 0.05\text{mH}$	E_{AR}	5.62	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	2.5	W
	$T_A = 100\text{ }^\circ\text{C}$		1	
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	$R_{\theta JC}$		6	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		50	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS (T_J = 25 °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 = 250μA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0	2.0	3.0	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 48V, V _{GS} = 0V			1	μA
		V _{DS} = 40V, V _{GS} = 0V, T _J = 125 °C			25	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 5V, V _{GS} = 10V	15			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 10A		13	16	mΩ
		V _{GS} = 4.5V, I _D = 5A		19	25	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 10A		25		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		2195		pF
Output Capacitance	C _{oss}			138		
Reverse Transfer Capacitance	C _{rss}			129		
Gate Resistance	R _g	V _{GS} = 15mV, V _{DS} = 0V, f = 1MHz		1.4		Ω
Total Gate Charge ^{1,2}	Q _g	V _{DS} = 30V, V _{GS} = 10V, I _D = 10A		50		nC
Gate-Source Charge ^{1,2}	Q _{gs}			8.8		
Gate-Drain Charge ^{1,2}	Q _{gd}			14.7		
Turn-On Delay Time ^{1,2}	t _{d(on)}	V _{DS} = 30V, I _D = 1A, V _{GS} = 10V, R _{GS} = 6Ω		20		nS
Rise Time ^{1,2}	t _r			15		
Turn-Off Delay Time ^{1,2}	t _{d(off)}			50		
Fall Time ^{1,2}	t _f			20		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Continuous Current	I _S				15	A
Pulsed Current ³	I _{SM}				60	
Forward Voltage ¹	V _{SD}	I _F = I _S , V _{GS} = 0V			1.3	V
Reverse Recovery Time	t _{rr}	I _F = 10A, dI _F /dt = 100A / μS		60		nS
Reverse Recovery Charge	Q _{rr}				42	

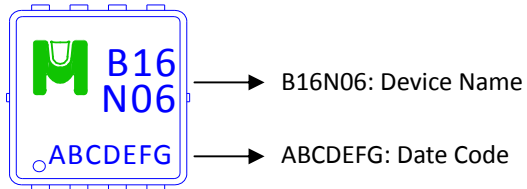
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

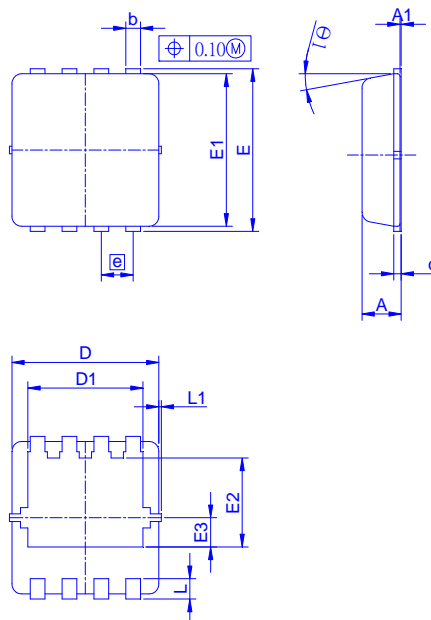
³Pulse width limited by maximum junction temperature.

Ordering & Marking Information:

Device Name: EMB16N06V for EDFN 3 x 3



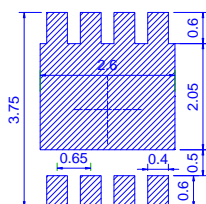
Outline Drawing



Dimension in mm

Dimension	A	A1	b	c	D	D1	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°
Typ.	0.80		0.30	0.152	3.00	2.35	3.20	3.00	1.75	0.575	0.65	0.40	0.13	10°
Max.	0.90	0.05	0.37	0.25	3.15	2.45	3.40	3.15	1.96			0.50		12°

Recommended minimum pads





TYPICAL CHARACTERISTICS

