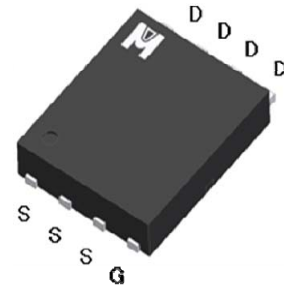
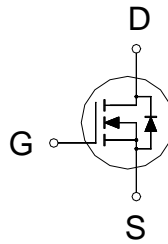




N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV_{DSS}	30V
$R_{DS(on)}$ (MAX.)	3.7m Ω
I_D	78A



UIS, 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	$T_C = 25^\circ\text{C}$	I_D	78	A
	$T_C = 100^\circ\text{C}$		47	
	$T_A = 25^\circ\text{C}$		20	
	$T_A = 70^\circ\text{C}$		16	
Pulsed Drain Current ¹		I_{DM}	160	
Avalanche Current		I_{AS}	60	
Avalanche Energy	$L = 0.1\text{mH}, I_D=60\text{A}, R_G=25\Omega$	E_{AS}	180	mJ
Repetitive Avalanche Energy ²	$L = 0.05\text{mH}$	E_{AR}	90	
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	50	W
	$T_C = 100^\circ\text{C}$		20	
Operating Junction & Storage Temperature Range		T_{j}, T_{stg}	-55 to 150	$^\circ\text{C}$

100% UIS testing in condition of $V_D=15\text{V}, L=0.1\text{mH}, V_G=10\text{V}, I_L=40\text{A}$, Rated $V_{DS}=30\text{V}$ N-CH

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNIT
Junction-to-Case	$R_{\theta JC}$		2.5	$^\circ\text{C}/\text{W}$
Junction-to-Ambient	$R_{\theta JA}$		50	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$



³50°C / W when mounted on a 1 in² pad of 2 oz copper.

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	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.5	3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V			1	μA
		V _{DS} = 20V, V _{GS} = 0V, T _J = 125 °C			25	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 10V, V _{GS} = 10V	78			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 30A		3.1	3.7	mΩ
		V _{GS} = 4.5V, I _D = 24A		4.6	6.1	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 24A		25		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		3590		pF
Output Capacitance	C _{oss}			555		
Reverse Transfer Capacitance	C _{rss}			450		
Gate Resistance	R _g	V _{GS} = 15mV, V _{DS} = 0V, f = 1MHz		1.2		Ω
Total Gate Charge ^{1,2}	Q _g (V _{GS} =10V)	V _{DS} = 15V, V _{GS} = 10V, I _D = 30A		60		nC
	Q _g (V _{GS} =4.5V)			26		
Gate-Source Charge ^{1,2}	Q _{gs}			7.5		
Gate-Drain Charge ^{1,2}	Q _{gd}			13		
Turn-On Delay Time ^{1,2}	t _{d(on)}		V _{DS} = 15V, I _D = 24A, V _{GS} = 10V, R _{GS} = 2.7Ω		20	
Rise Time ^{1,2}	t _r			15		
Turn-Off Delay Time ^{1,2}	t _{d(off)}			55		
Fall Time ^{1,2}	t _f			18		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Continuous Current	I _S				78	A
Pulsed Current ³	I _{SM}				160	
Forward Voltage ¹	V _{SD}	I _F = 30A, V _{GS} = 0V			1.3	V
Reverse Recovery Time	t _{rr}	I _F = I _S , dI _F /dt = 100A / μS		32		nS
Peak Reverse Recovery Current	I _{RM(REC)}			200		A
Reverse Recovery Charge	Q _{rr}			12		nC

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

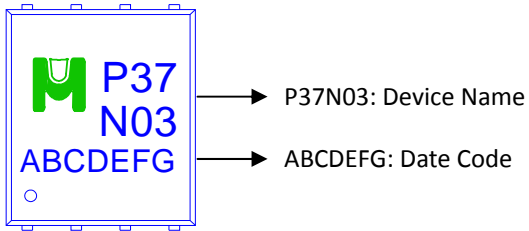
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

EMC will review datasheet by quarter, and update new version.

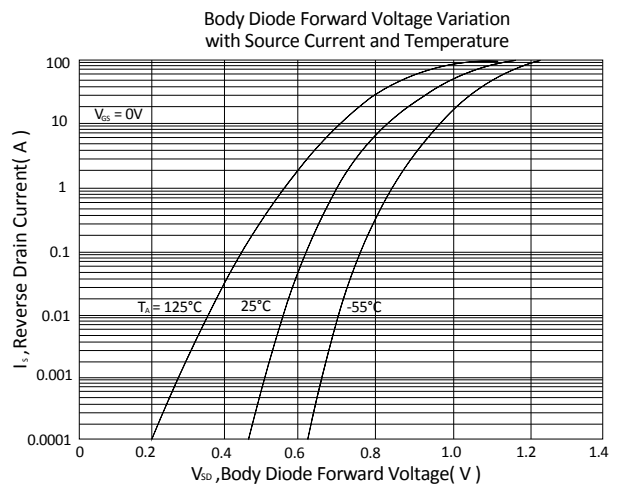
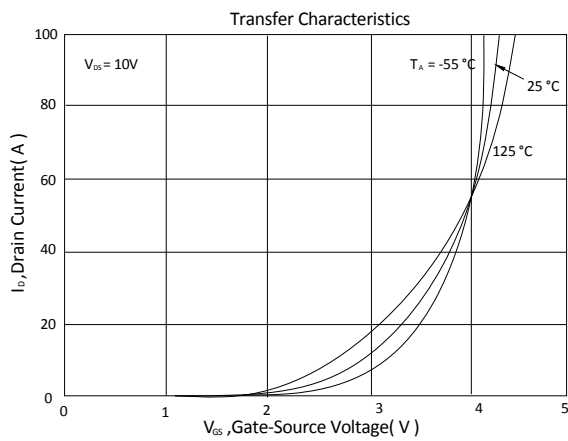
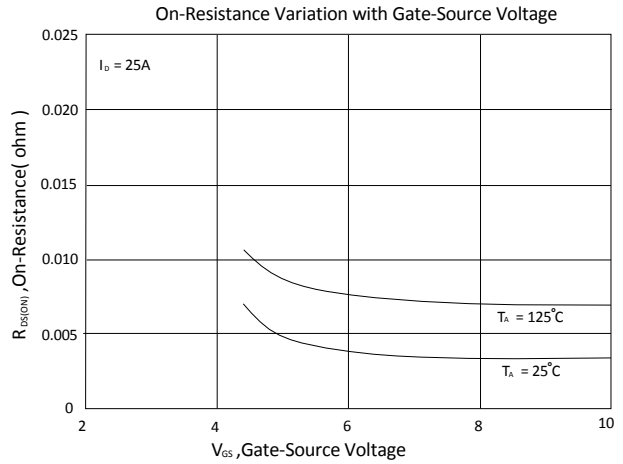
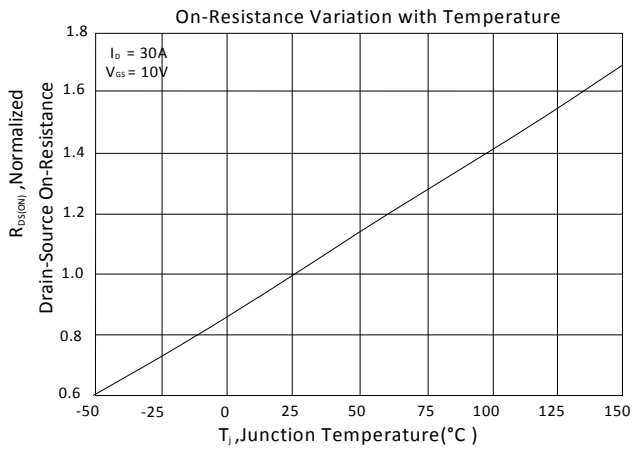
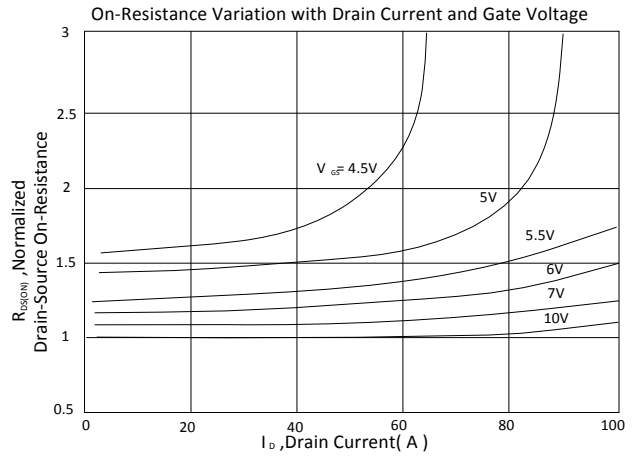
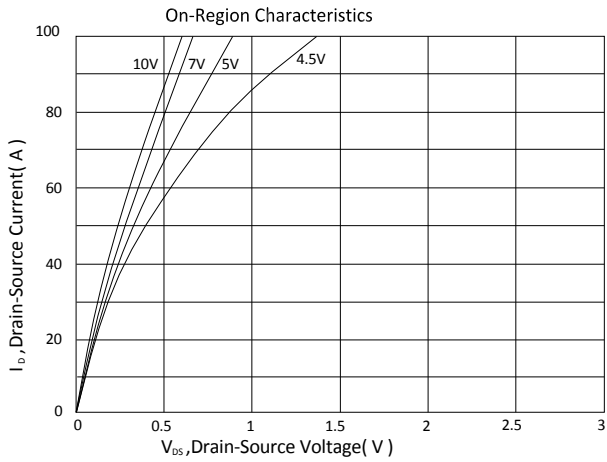
Ordering & Marking Information:

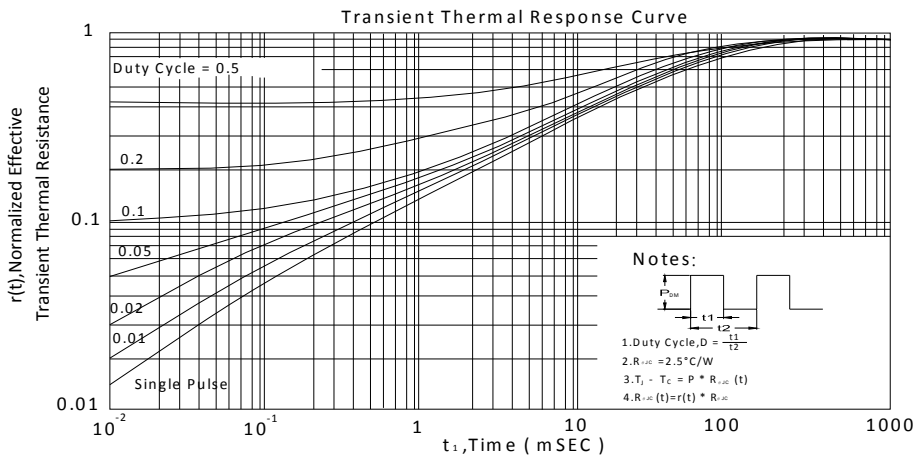
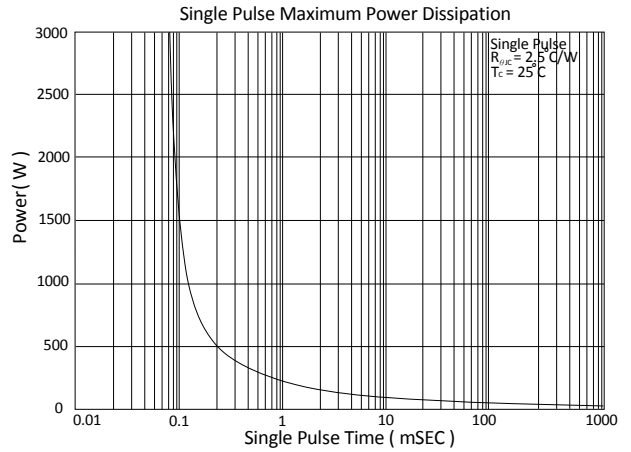
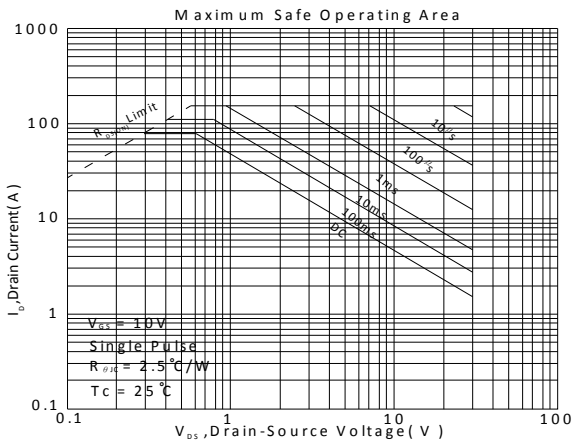
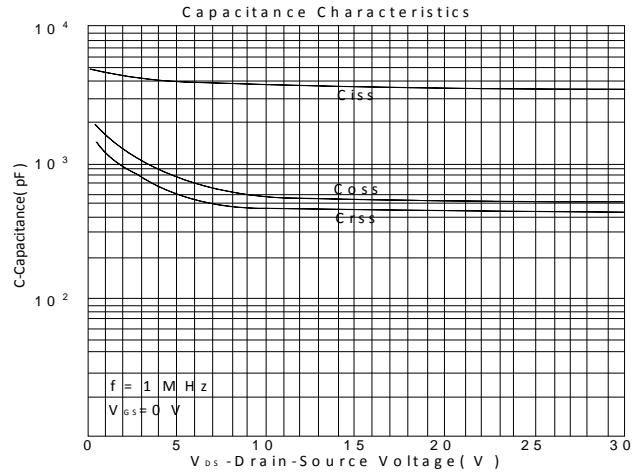
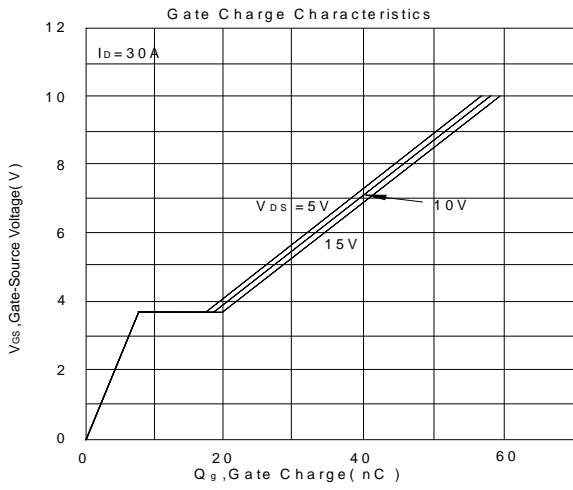
Device Name: EMP37N03H for EDFN 5 x 6





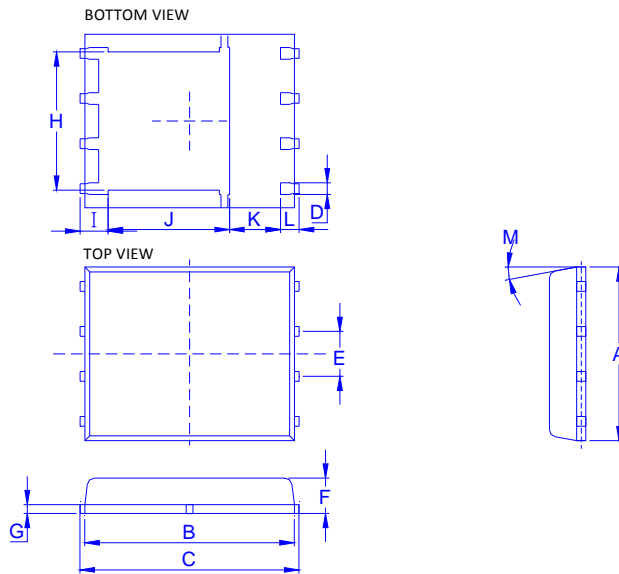
TYPICAL CHARACTERISTICS







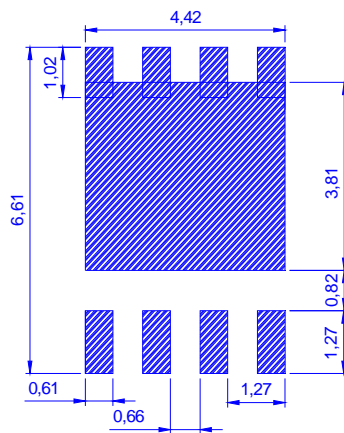
Outline Drawing



Dimension in mm

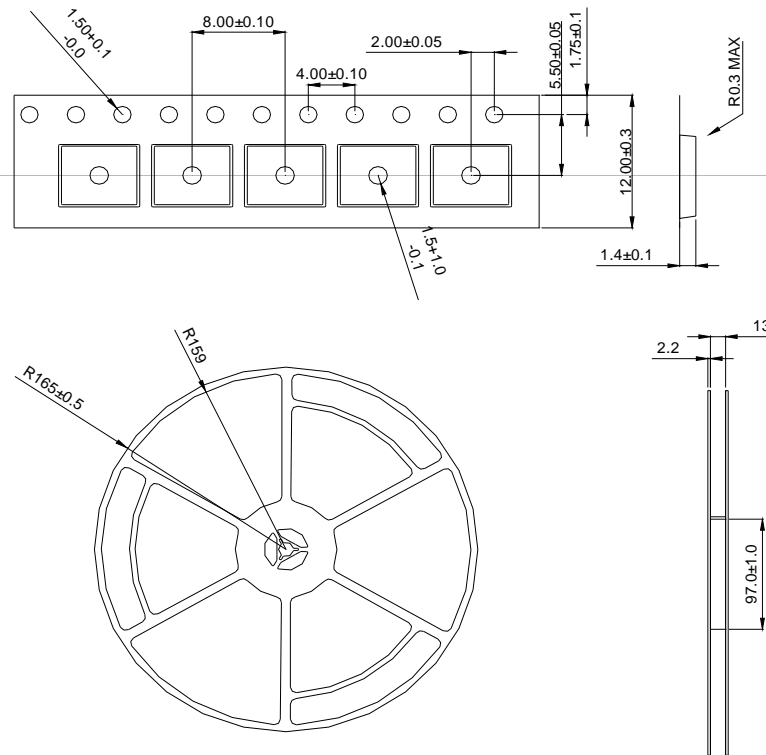
Dimension	A	B	C	D	E	F	G	H	I	J	K	L	M
Min.	4.80	5.50	5.90	0.3		0.85	0.15	3.67	0.41	3.00	0.94	0.45	0°
Typ.	5.05	5.70	6.03	0.41	1.27								
Max.	5.30	5.90	6.15	0.51		1.20	0.30	4.54	0.85	3.92	1.7	0.71	12°

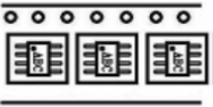
Recommended minimum pads





◆ Tape&Reel Information:2500pcs/Reel(Dimension in millimeter)



產品別	EDFN 5*6
Reel 尺寸	13"
編帶方式	L-Type 
前空格	25
後空格	50
裝箱數	
滿捲數量	2.5K
捲/內盒比	1 : 1
內盒滿箱數	2.5K
內/外箱比	10 : 1
外箱滿箱數	25K