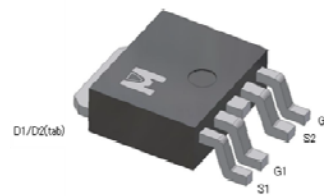
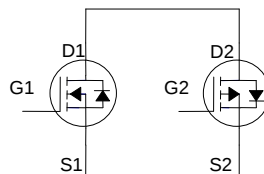


N & P-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

	N-CH	P-CH
BV_{DSS}	60V	-60V
$R_{DS(on)} (MAX.)$	37m Ω	90m Ω
I_D	12A	-7A



Pb-Free Lead Plating & Halogen Free



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

PARAMETERS/TEST CONDITIONS			SYMBOL	LIMITS		UNIT
Gate-Source Voltage			V _{GS}	N-CH	P-CH	V
				±20	±20	
Continuous Drain Current	T _C = 25 °C		I _D	12	-7	A
	T _C = 100 °C			8	-5	
Pulsed Drain Current ¹			I _{DM}	48	-28	
Power Dissipation	T _C = 25 °C		P _D	21		W
	T _C = 100 °C			13		
Operating Junction & Storage Temperature Range			T _J , T _{stg}	-55 to 150		°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	$R_{\theta JA}$		42	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$ $V_{GS} = 0V, I_D = -250\mu A$	N-CH	60			V
			P-CH	-60			
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$ $V_{DS} = V_{GS}, I_D = -250\mu A$	N-CH	1.0	2.0	3.0	
			P-CH	-1.0	-2.0	-3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$ $V_{DS} = 0V, V_{GS} = \pm 20V$	N-CH			± 100	nA
			P-CH			± 100	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 48V, V_{GS} = 0V$ $V_{DS} = -48V, V_{GS} = 0V$	N-CH			1	μA
			P-CH			-1	
		$V_{DS} = 40V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$ $V_{DS} = -40V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$	N-CH			25	
			P-CH			-25	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$ $V_{DS} = -5V, V_{GS} = -10V$	N-CH	12			A
			P-CH	-7			
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 10A$ $V_{GS} = -10V, I_D = -7A$	N-CH		33	37	mΩ
			P-CH		80	90	
		$V_{GS} = 5V, I_D = 8A$ $V_{GS} = -5V, I_D = -5A$	N-CH		40	50	
			P-CH		120	140	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 10A$ $V_{DS} = -5V, I_D = -7A$	N-CH		16		S
			P-CH		9		
DYNAMIC							
Input Capacitance	C_{iss}	N-CH $V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$ P-CH $V_{GS} = 0V, V_{DS} = -25V, f = 1MHz$	N-CH		1112		pF
			P-CH		1370		
Output Capacitance	C_{oss}		N-CH		86		
			P-CH		88		
Reverse Transfer Capacitance	C_{rss}		N-CH		72		
			P-CH		63		

Total Gate Charge ^{1,2}	Q _g	N-CH V _{DS} = 30V, V _{GS} = 10V, I _D = 10A P-CH V _{DS} = -30V, V _{GS} = -10V, I _D = -7A	N-CH		29		nC
Gate-Source Charge ^{1,2}	Q _{gs}		P-CH		16.2		
Gate-Drain Charge ^{1,2}	Q _{gd}		N-CH		3.3		
			P-CH		2.0		
			N-CH		7.4		
			P-CH		3.5		
Turn-On Delay Time ^{1,2}	t _{d(on)}	N-CH V _{DS} = 10V, I _D = 1A, V _{GS} = 10V, R _{GS} = 6Ω	N-CH		10		nS
Rise Time ^{1,2}	t _r		P-CH		10		
			N-CH		22		
			P-CH		12		
Turn-Off Delay Time ^{1,2}	t _{d(off)}	P-CH V _{DS} = -10V, I _D = -1A, V _{GS} = -10V, R _{GS} = 6Ω	N-CH		17		
Fall Time ^{1,2}	t _f		P-CH		20		
			N-CH		25		
		P-CH		12			
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _c = 25 °C)							
Continuous Current	I _S		N-CH			12	A
			P-CH			-7	
Pulsed Current ³	I _{SM}		N-CH			48	
			P-CH			-28	
Forward Voltage ¹	V _{SD}	I _F = I _S , V _{GS} = 0V	N-CH			1.3	V
			P-CH			-1.3	

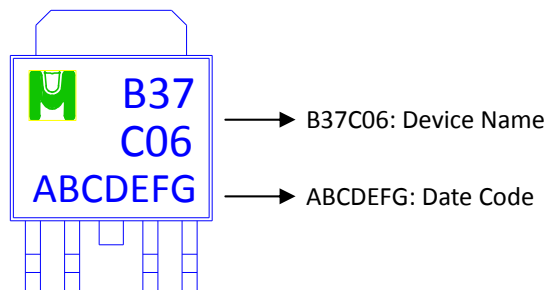
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

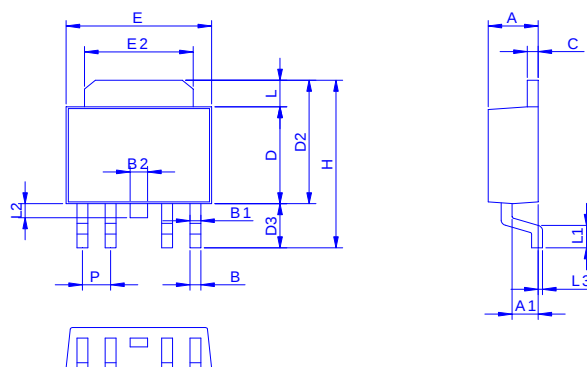
³Pulse width limited by maximum junction temperature.

Ordering & Marking Information:

Device Name: EMB37C06A for DPAK (TO-252)



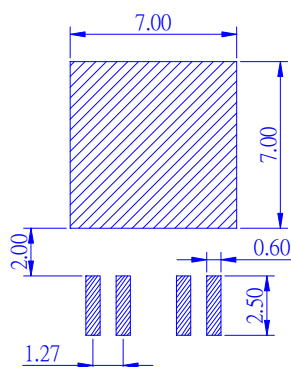
Outline Drawing



Dimension in mm

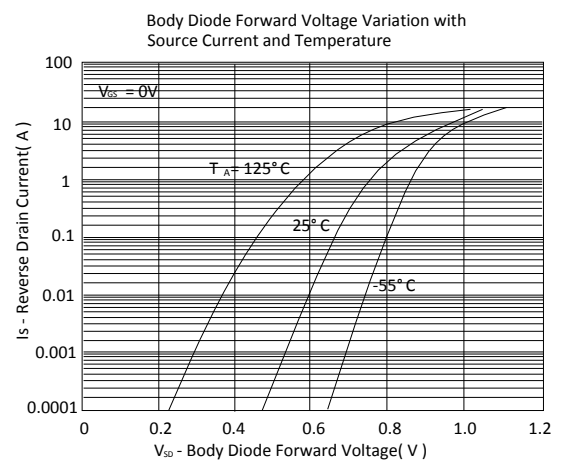
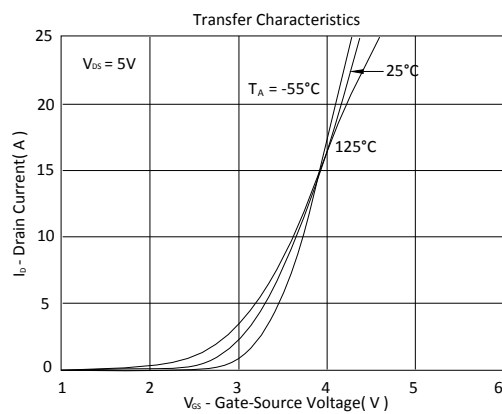
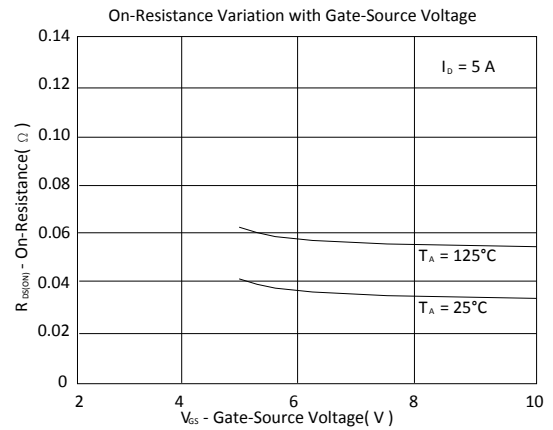
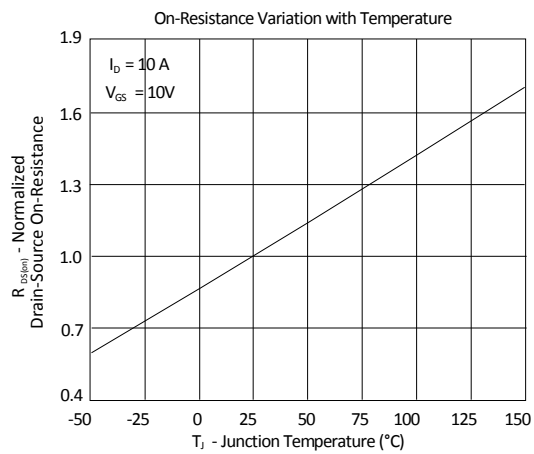
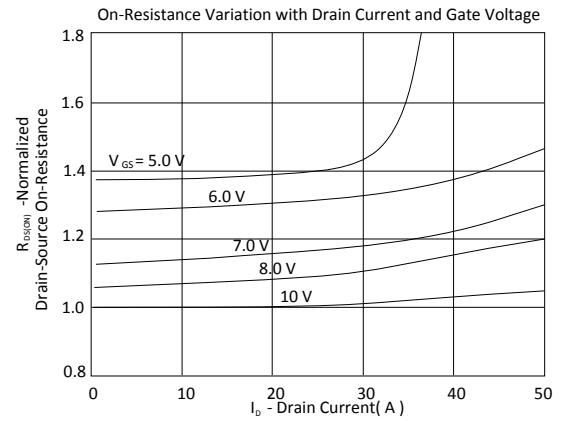
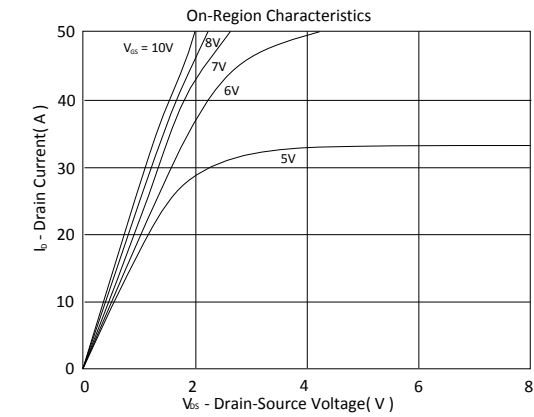
Dimension	A	A1	B	B1	B2	C	D	D2	D3	E	E2	H	L	L1	L2	L3	P
Min.	2.10	1.10	0.30	0.55	0.40	0.40	5.30	6.70	2.20	6.30	4.80	9.20	1.30	0.90	0.50	0.00	1.17
Max.	2.50	1.30	0.70	0.75	0.80	0.60	5.70	7.30	3.00	6.70	5.45	10.15	1.70	1.50	1.10	0.30	1.37

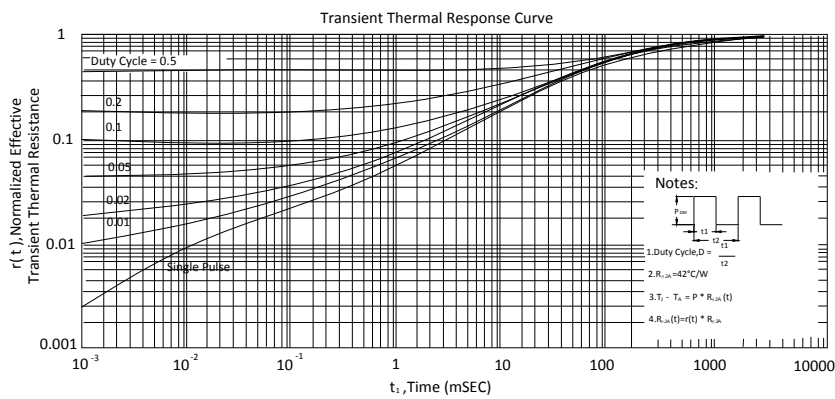
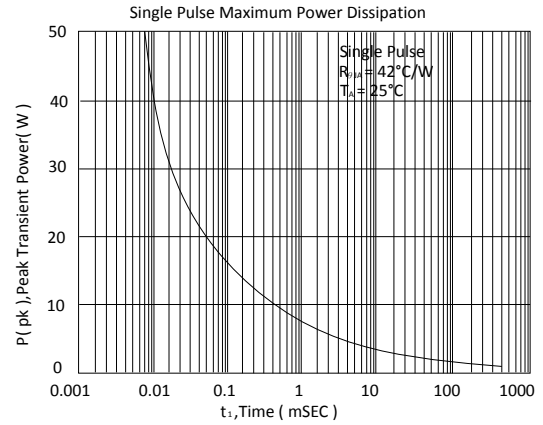
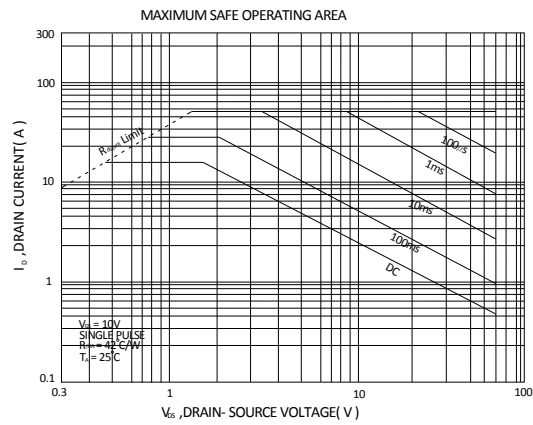
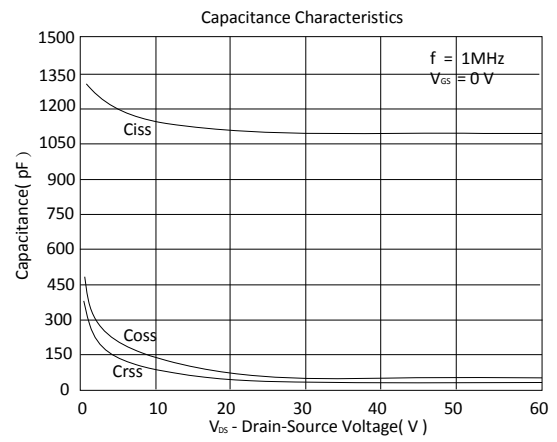
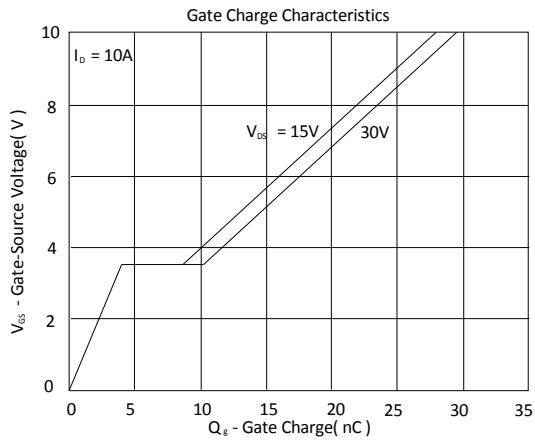
Footprint





N-Channel







P-Channel

