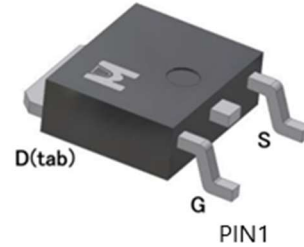
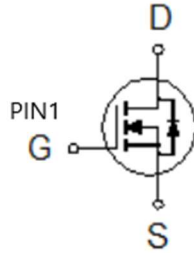


N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV_{DSS}	30V
$R_{DS(on)} (MAX.)$	6m Ω
I_D	70A



N Channel MOSFET

UIS, Rg 100% Tested

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}	± 20	V
Continuous Drain Current	$T_c = 25\text{ }^\circ\text{C}$	I_D	70	A
	$T_c = 100\text{ }^\circ\text{C}$		45	
Pulsed Drain Current ¹		I_{DM}	280	
Avalanche Current		I_{AS}	40	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	80	mJ
Repetitive Avalanche Energy ²	$L = 0.05\text{mH}$	E_{AR}	40	
Power Dissipation	$T_c = 25\text{ }^\circ\text{C}$	P_D	50	W
	$T_c = 100\text{ }^\circ\text{C}$		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 $V_{DS}=25\text{V}$ 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	$R_{\theta JA}$		75	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$



ELECTRICAL CHARACTERISTICS (T_c = 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	80			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 30A		5.3	6	mΩ
		V _{GS} = 4.5V, I _D = 20A		7.5	9.5	
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		1983		pF
Output Capacitance	C _{oss}			328		
Reverse Transfer Capacitance	C _{rss}			287		
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		34.6		nC
	Q _g (V _{GS} =4.5V)			21		
Gate-Source Charge ^{1,2}	Q _{gs}			4.8		
Gate-Drain Charge ^{1,2}	Q _{gd}			9.7		
Turn-On Delay Time ^{1,2}	t _{d(on)}		V _{DS} = 15V, I _D = 25A, V _{GS} = 10V, R _{GS} = 2.7Ω		9	
Rise Time ^{1,2}	t _r			20		
Turn-Off Delay Time ^{1,2}	t _{d(off)}			25		
Fall Time ^{1,2}	t _f			3		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_c = 25 °C)						
Continuous Current	I _S				70	A
Pulsed Current ³	I _{SM}				280	
Forward Voltage ¹	V _{SD}	I _F = I _S , 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	

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

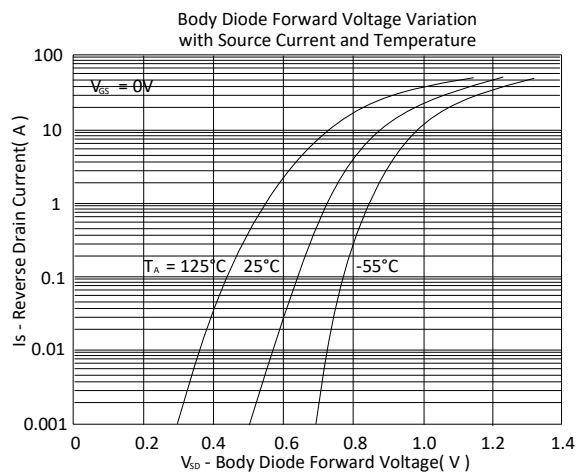
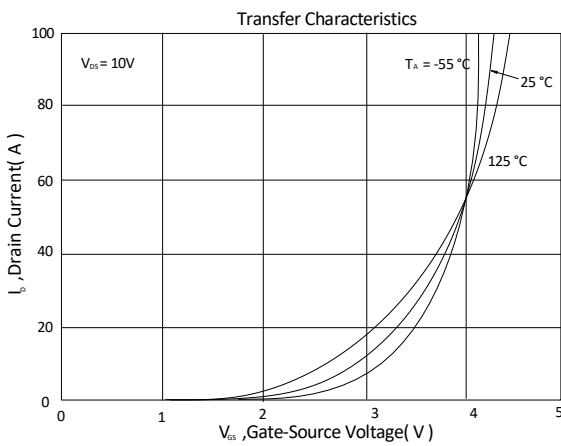
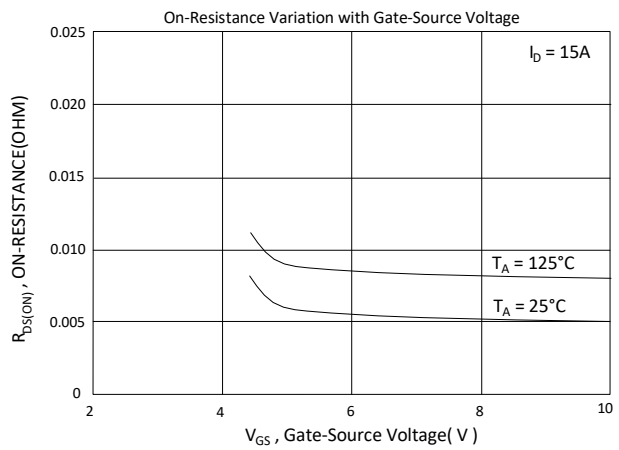
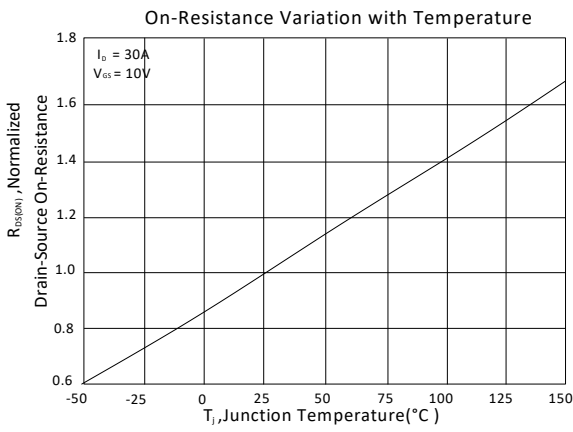
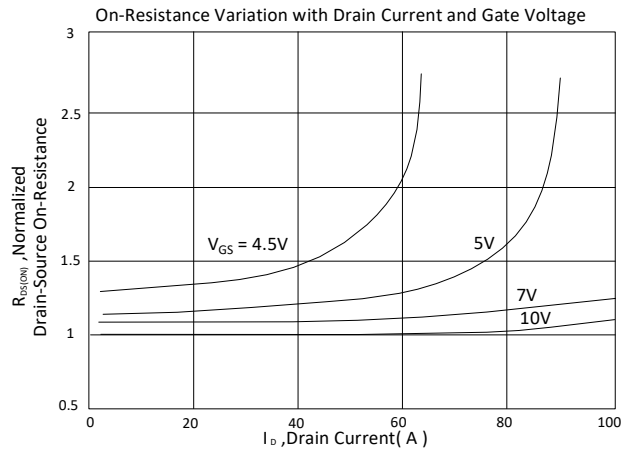
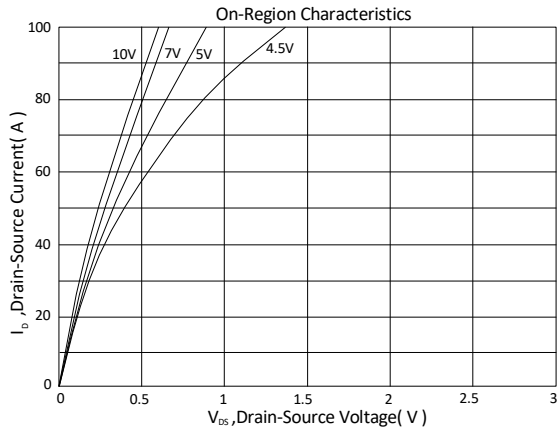
²Independent of operating temperature.

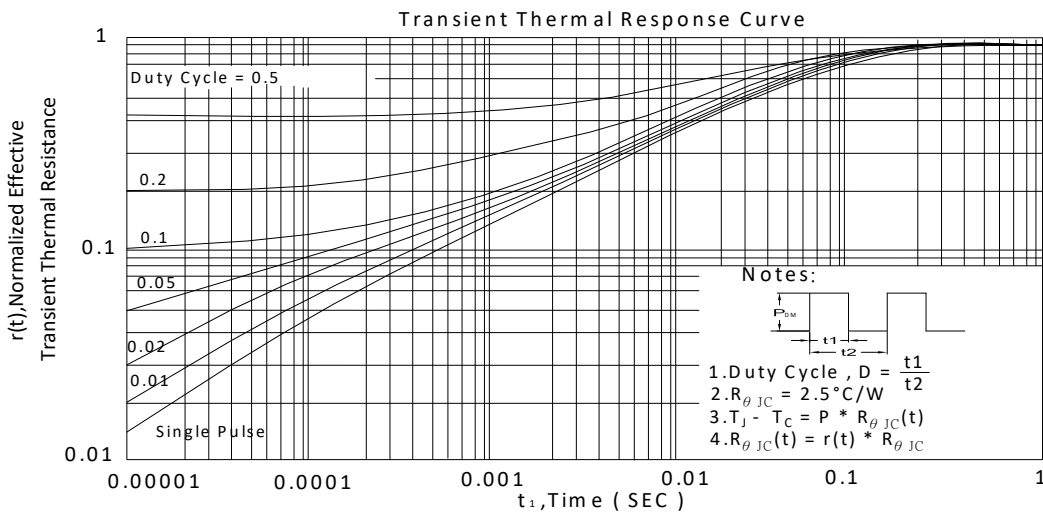
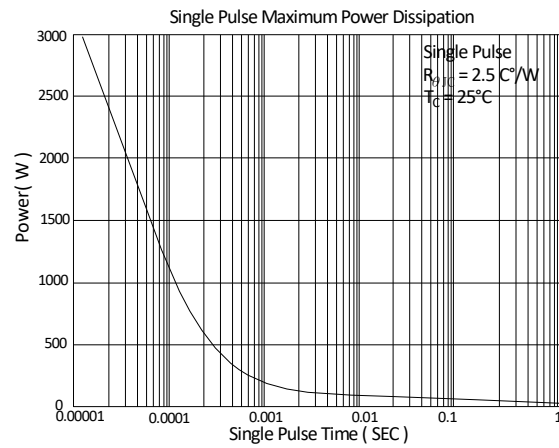
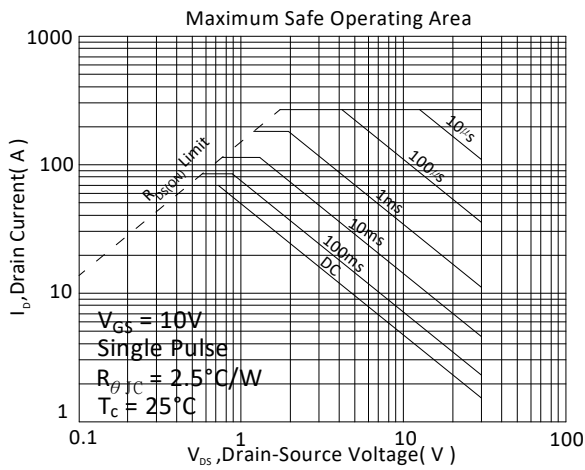
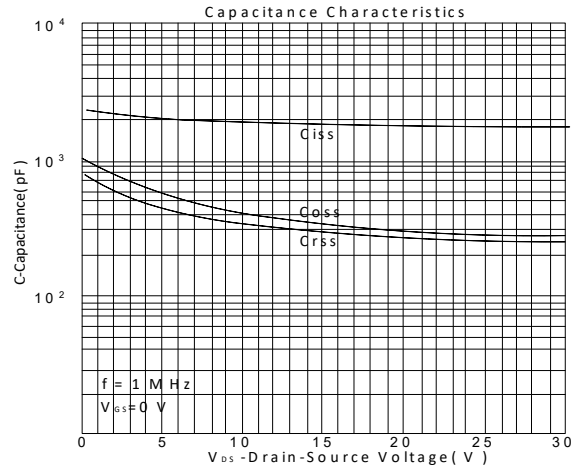
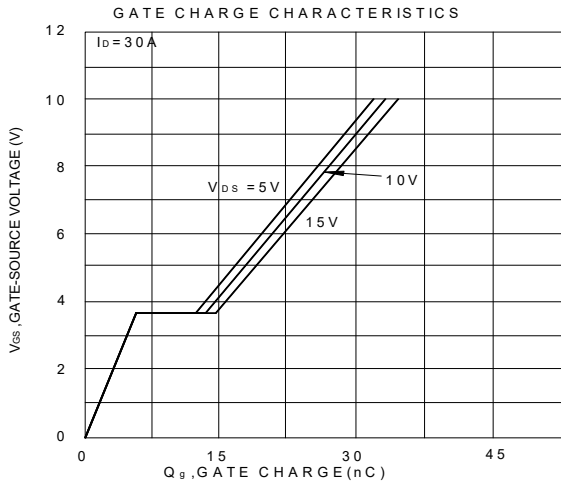
³Pulse width limited by maximum junction temperature.

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



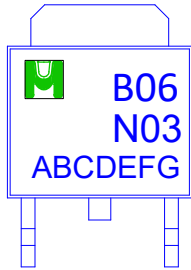
TYPICAL CHARACTERISTICS





Ordering & Marking Information:

Device Name: EMB06N03A for DPAK (TO-252)



EMB06N03A : Device Name

ABCDEFG: Date Code

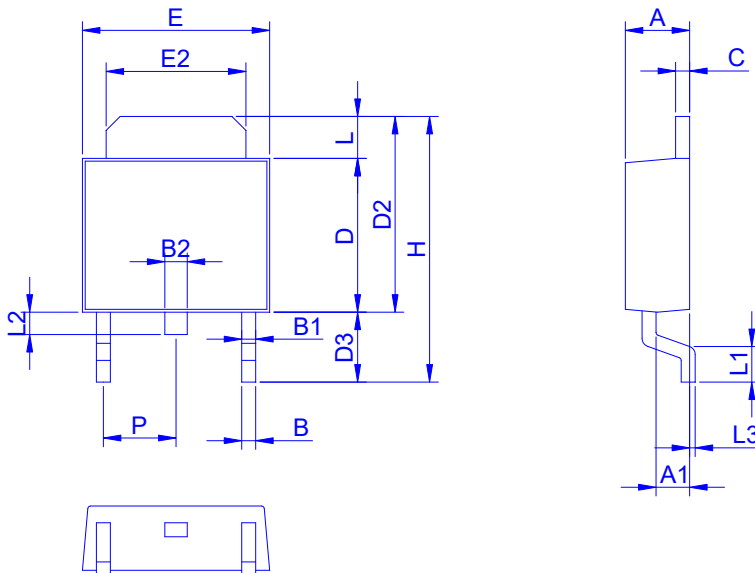
A: Assembly House

B: Year(A:2008 B:2009 C:2010....)

C: Month(A:01 B:02 C:03 D:04 E:05 F:06 G:07 H:08 I:09 J:10 K:11 L:12)

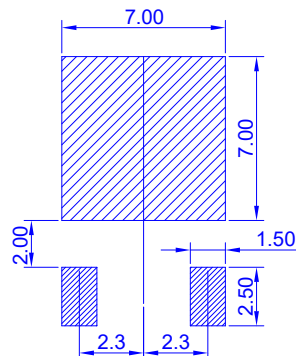
DEFG: Serial No.

Outline Drawing



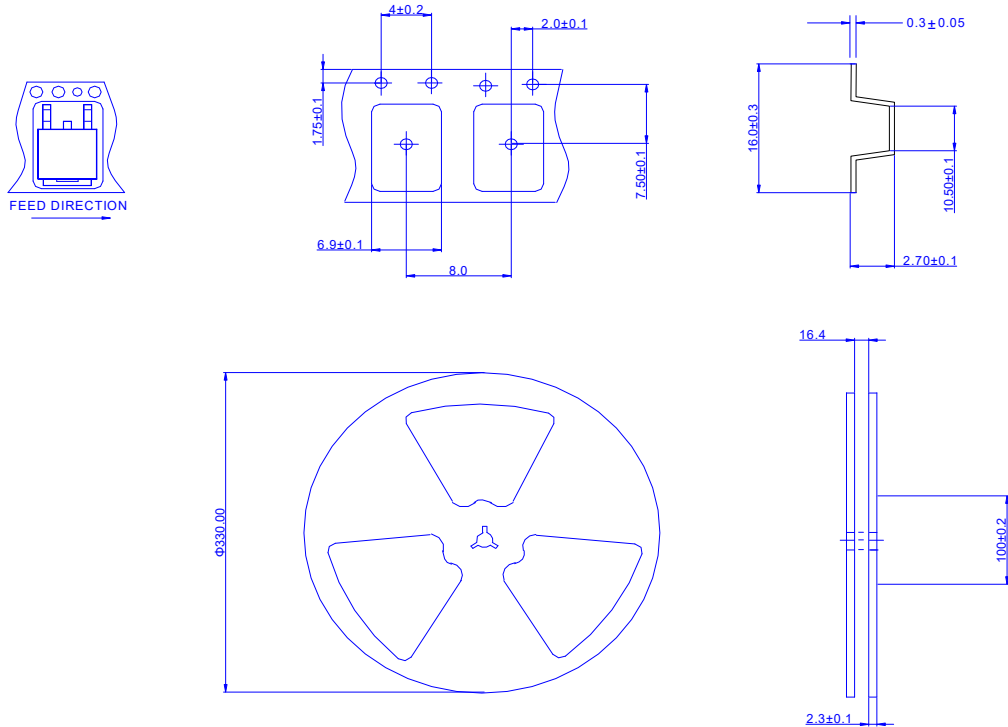
Dimension	A	A1	B	B1	B2	C	D	D2	D3	E	E2	H	L	L1	L2	L3	P
Min.	2.10	0.95	0.30	0.40	0.60	0.40	5.30	6.70	2.20	6.40	4.80	9.20	0.89	0.90	0.50	0.00	2.10
Max.	2.50	1.30	0.85	0.94	1.00	0.60	6.20	7.30	3.00	6.70	5.45	10.15	1.70	1.65	1.10	0.30	2.50


Footprint





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



產品別	TO252-2
Reel 尺寸	13"
編帶方式	FEED DIRECTION 
前空格	35
後空格	35
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