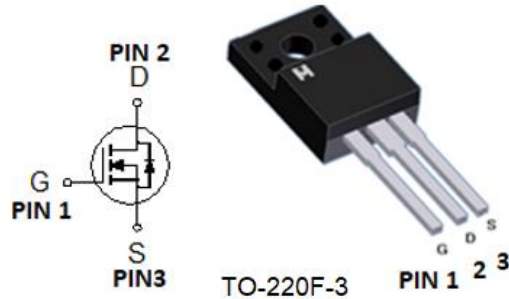


Single N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV_{DSS}	250V
$R_{DS(on)}$ (MAX.)	0.22 Ω
I_D	18A

Pin Description:



Single N Channel MOSFET

UIS, Rg 100% Tested

Pb-Free Lead Plating & Halogen Free



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		V_{GS}	± 30	V
Continuous Drain Current	$T_C = 25^\circ\text{C}$	I_D	18	A
	$T_C = 100^\circ\text{C}$		8	
Pulsed Drain Current ¹		I_{DM}	45	
Avalanche Current		I_{AS}	10	
Avalanche Energy	$L = 1\text{mH}, I_D = 10\text{A}, R_G = 25\Omega$	E_{AS}	50	mJ
Repetitive Avalanche Energy ²	$L = 0.5\text{mH}$	E_{AR}	25	
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	38	W
	$T_C = 100^\circ\text{C}$		15	
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	$R_{\theta JC}$		3.3	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		65	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

³Pulsed drain current rating is package limited

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 = 10mA	250			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.0	3.7	4.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±30V			±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 °C			25	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 10V, V _{GS} = 10V	18			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 9A		0.19	0.22	Ω
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 9A		18		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		3740		pF
Output Capacitance	C _{oss}			127		
Reverse Transfer Capacitance	C _{rss}			72		
Gate Resistance	R _g	V _{GS} = 15mV, V _{DS} = 0V, f = 1MHz		1.7		Ω
Total Gate Charge ^{1,2}	Q _g	V _{DS} = 200V, V _{GS} = 10V, I _D = 2.2A		53		nC
Gate-Source Charge ^{1,2}	Q _{gs}			13		
Gate-Drain Charge ^{1,2}	Q _{gd}			20		
Turn-On Delay Time ^{1,2}	t _{d(on)}	V _{DS} = 125V, I _D = 1A, V _{GS} = 10V, R _G = 6Ω		30		nS
Rise Time ^{1,2}	t _r			200		
Turn-Off Delay Time ^{1,2}	t _{d(off)}			75		
Fall Time ^{1,2}	t _f			120		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_c = 25 °C)						
Continuous Current	I _S				18	A
Pulsed Current ³	I _{SM}				72	
Forward Voltage ¹	V _{SD}	I _F = I _S , V _{GS} = 0V			1.3	V
Reverse Recovery Time	t _{rr}	I _F = 4.4A, dI _F /dt = 100A / μS		200		nS
Reverse Recovery Charge	Q _{rr}				1.2	

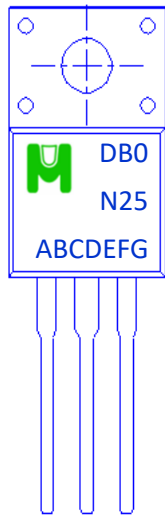
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

Ordering & Marking Information:

Device Name: EMDB0N25F for TO-220F



DB0N25: Device Name

ABCDEFG: Date Code

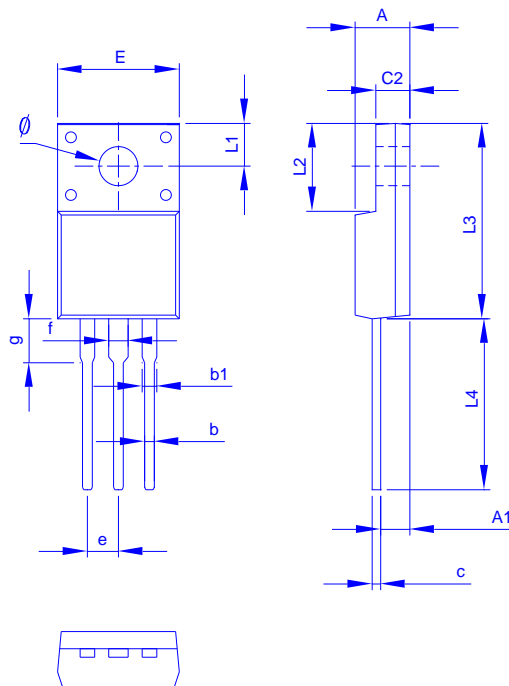
A: Assembly House

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

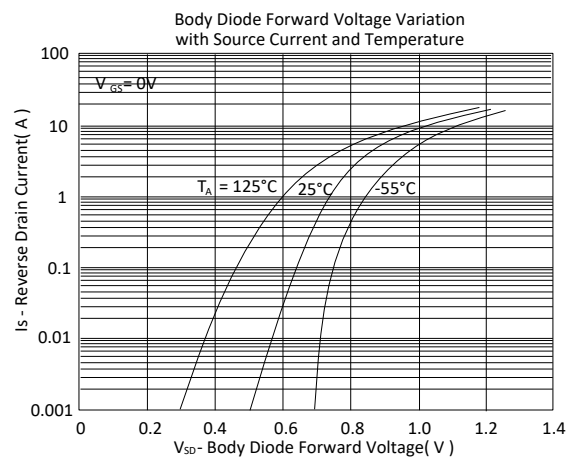
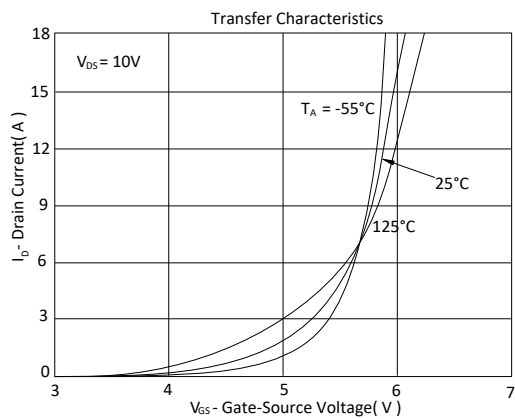
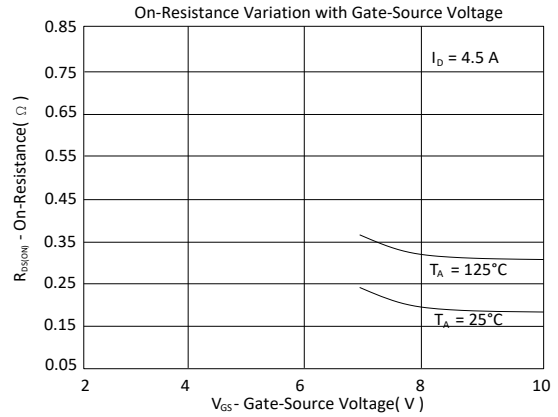
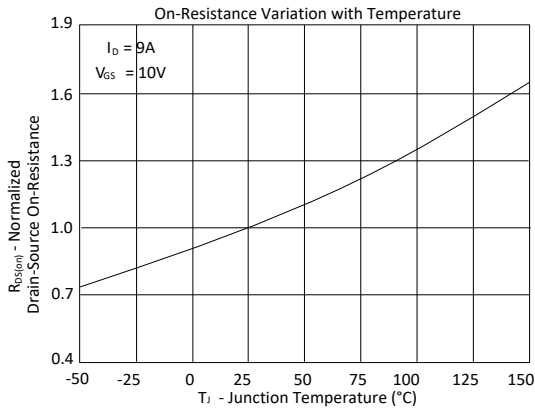
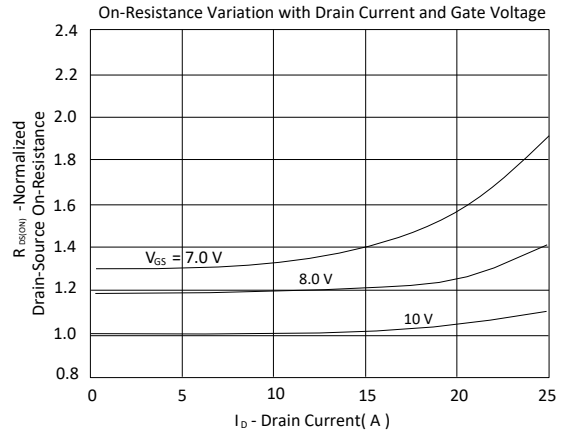
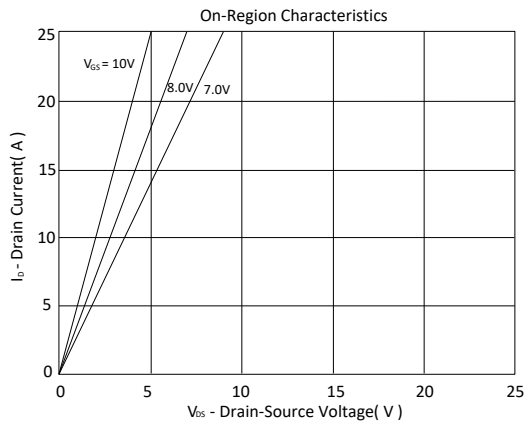


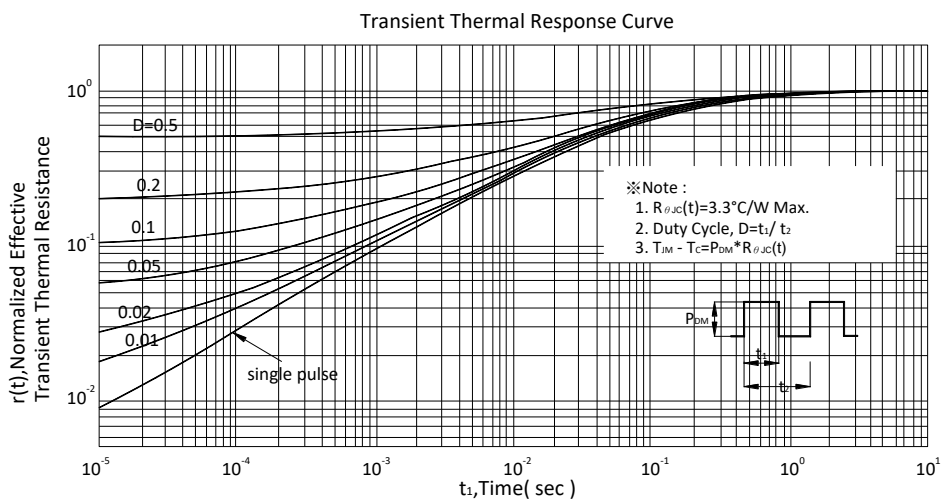
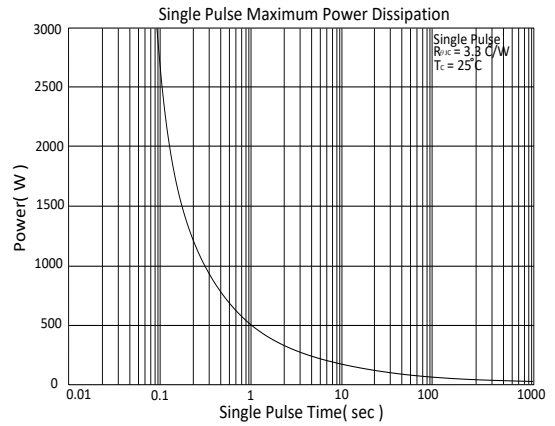
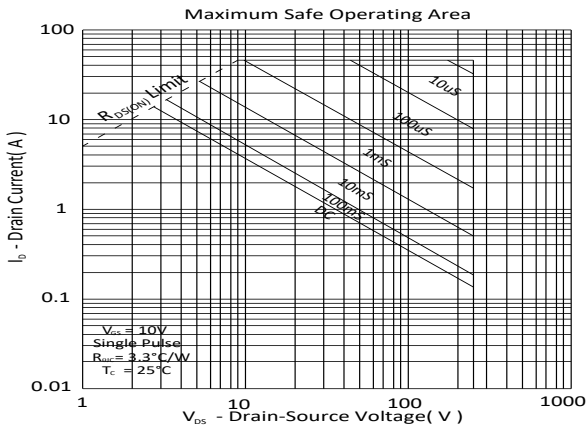
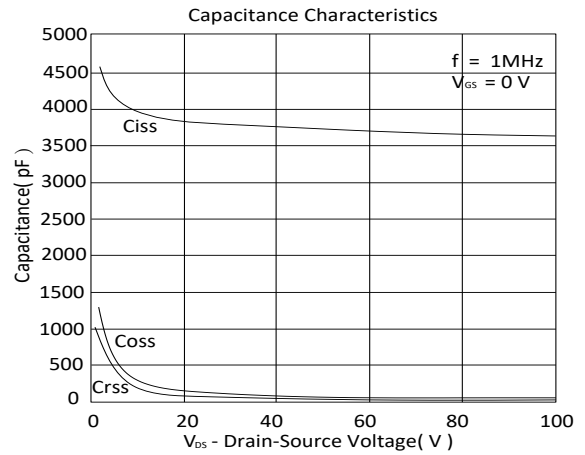
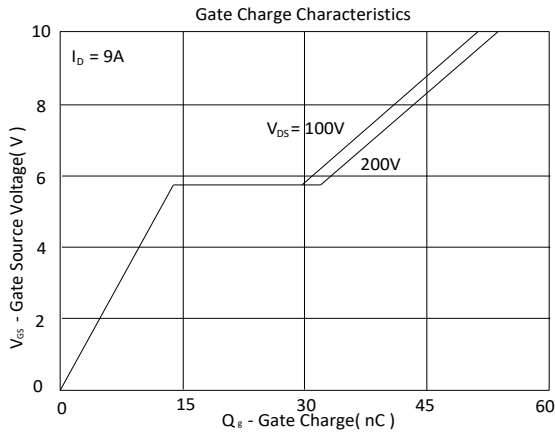
Dimension in mm

Dimension	A	A1	b	b1	c	c2	E	L1	L2	L3	L4	ϕ	e	f	g
Min.	4.3	2.49	0.5	1.1	0.4	2.34	9.96	2.7	6.48	14.8	12.65	3	2.44	1.17	2.93
Typ.	4.5	2.59	0.8	1.3	0.5	2.54	10.1	3.25	6.68	15.87	12.98	3.1	2.54	1.28	3.03
Max.	4.9	2.96	0.95	1.6	0.75	3.2	10.36	3.45	6.9	16.2	13.5	3.38	2.64	1.75	4



TYPICAL CHARACTERISTICS







◆ Tube Information: 50pcs/Tube (1000pcs/Box)

