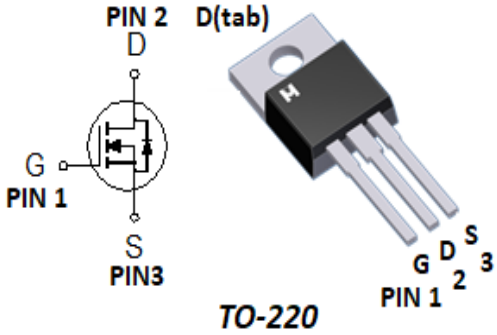
杰力科技股份有限公司
Excelliance MOS Corporation

EMD08N06E

N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV_{DSS}	60V
$R_{DSON\ (MAX.)}$	8mΩ
I_D	110A



UIS, Rg 100% Tested

RoHS & Halogen Free & TSCA Complianet

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C = 25 °C	I_D	110	A
	T_C = 100 °C		80	
Pulsed Drain Current[1]		I_{DM}	380	
Avalanche Current		I_{AS}	60	
Avalanche Energy	L = 0.1mH, I_{AS}=60A, RG=25Ω	E_{AS}	180	mJ
Repetitive Avalanche Energy[2]	L = 0.05mH	E_{AR}	90	
Power Dissipation	T_C = 25 °C	P_D	166	W
	T_C = 100 °C		68	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

100% UIS testing in condition of V_D=30V, L=0.1mH, V_G=10V, I_L=40A, Rated V_{DS}=60V N-CH

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNIT
Junction-to-Case	$R_{\theta JC}$		0.75	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

[1]Pulse width limited by maximum junction temperature.

[2]Duty cycle ≤ 1%

[3]The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

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	2	3	4	
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} = 10V, V_{GS} = 10V	110			A
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 20A		6.6	8.0	mΩ
Forward Transconductance[1]	g_{fs}	V_{DS} = 5V, I_D = 20A		50		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		2675		pF
Output Capacitance	C_{oss}			345		
Reverse Transfer Capacitance	C_{rss}			120		
Gate Resistance	R_g	V_{GS} = 15mV, V_{DS} = 0V, f = 1MHz		1.9		Ω
Total Gate Charge[1,2]	Q_g	V_{DS} = 30V, V_{GS} = 10V, I_D = 20A		35		nC
Gate-Source Charge[1,2]	Q_{gs}			12		
Gate-Drain Charge[1,2]	Q_{gd}			11		
Turn-On Delay Time[1,2]	$t_{d(on)}$	V_{DS} = 30V, I_D = 1A, V_{GS} = 10V, R_{GS} = 6Ω		15		nS
Rise Time[1,2]	t_r			70		
Turn-Off Delay Time[1,2]	$t_{d(off)}$			100		
Fall Time[1,2]	t_f			80		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Continuous Current	I_S				110	A
Pulsed Current[3]	I_{SM}				380	
Forward Voltage[1]	V_{SD}	I_F = 20A, V_{GS} = 0V			1.3	V
Reverse Recovery Time	t_{rr}	I_F = 25A, dI_F/dt = 100A / μS		30		nS
Reverse Recovery Charge	Q_{rr}			150		nC

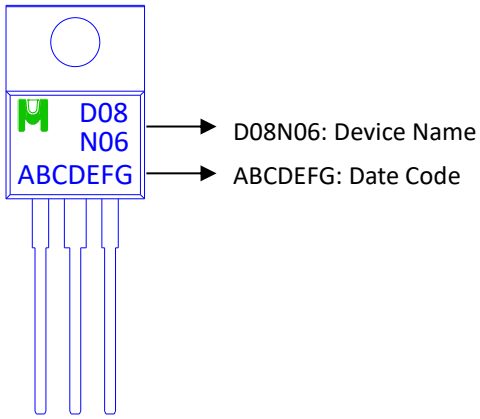
[1]Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

[2]Independent of operating temperature.

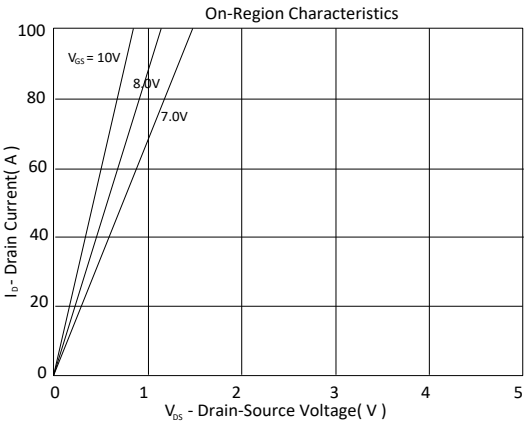
[3]Pulse width limited by maximum junction temperature.

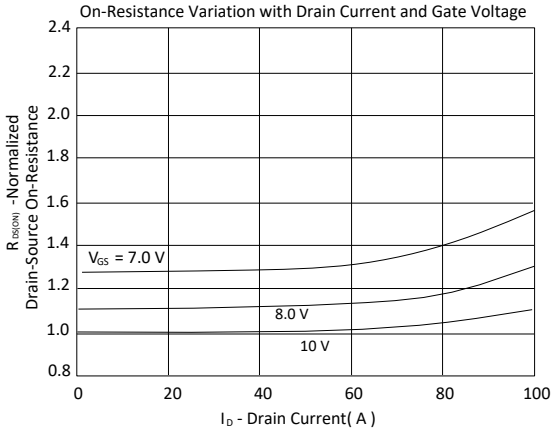
Ordering & Marking Information:

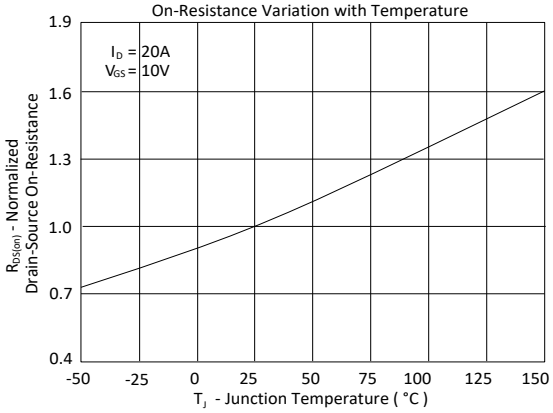
Device Name: EMD08N06E for TO-220

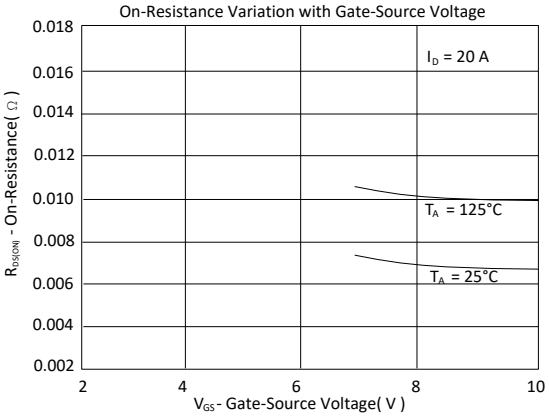


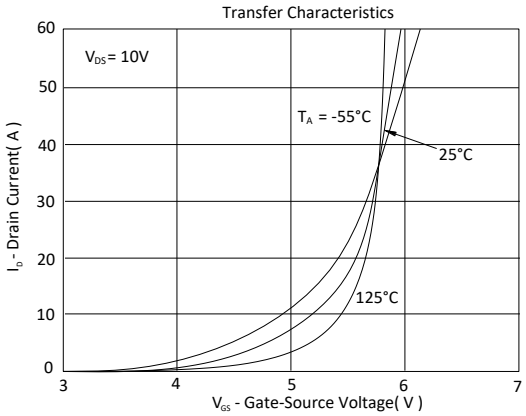
TYPICAL CHARACTERISTICS

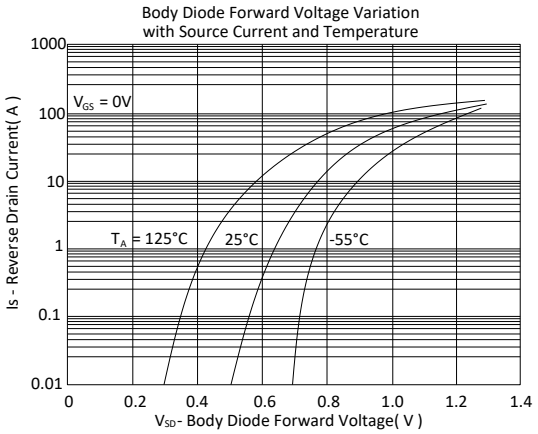




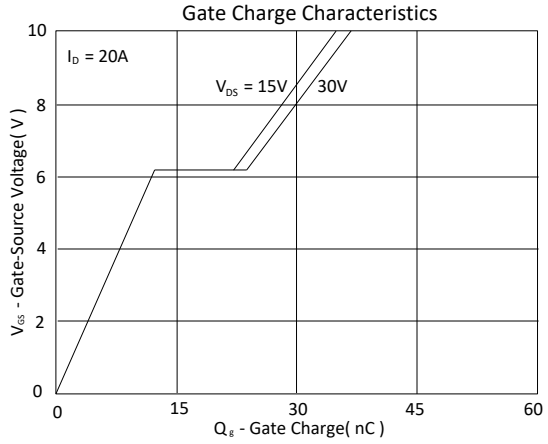




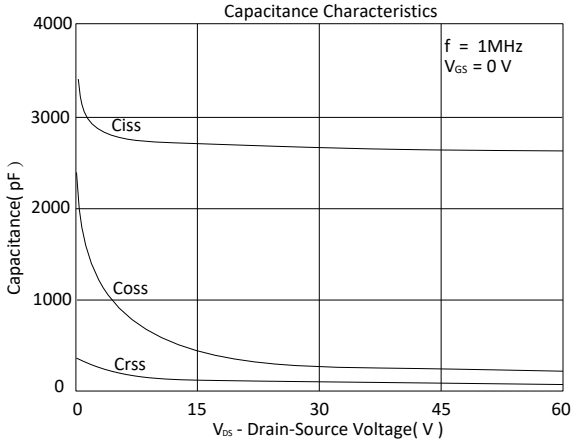




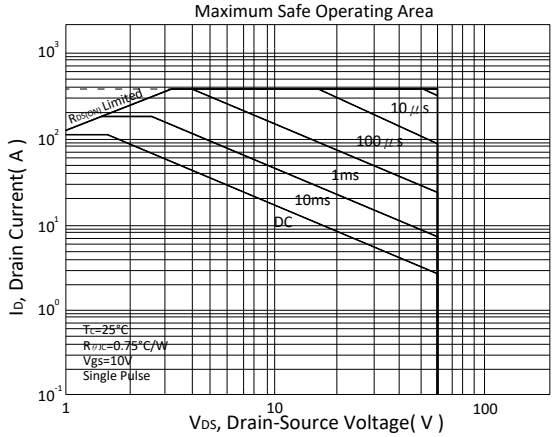
Gate Charge Characteristics



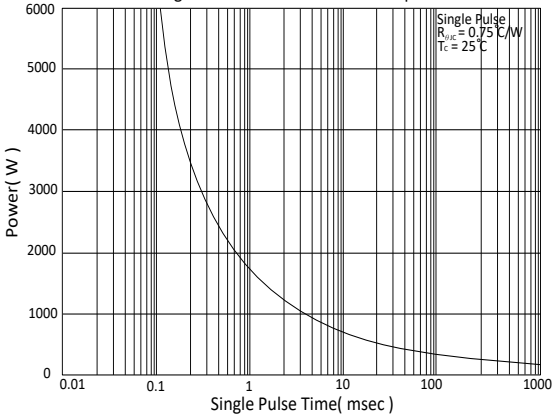
Capacitance Characteristics



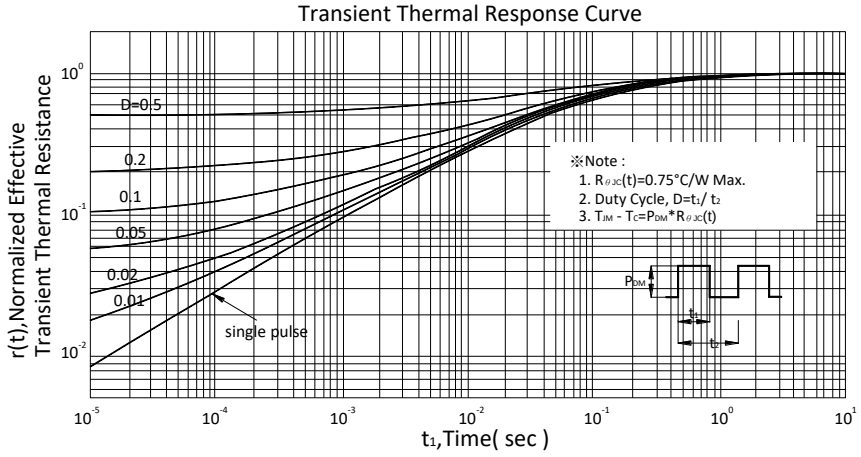
Maximum Safe Operating Area



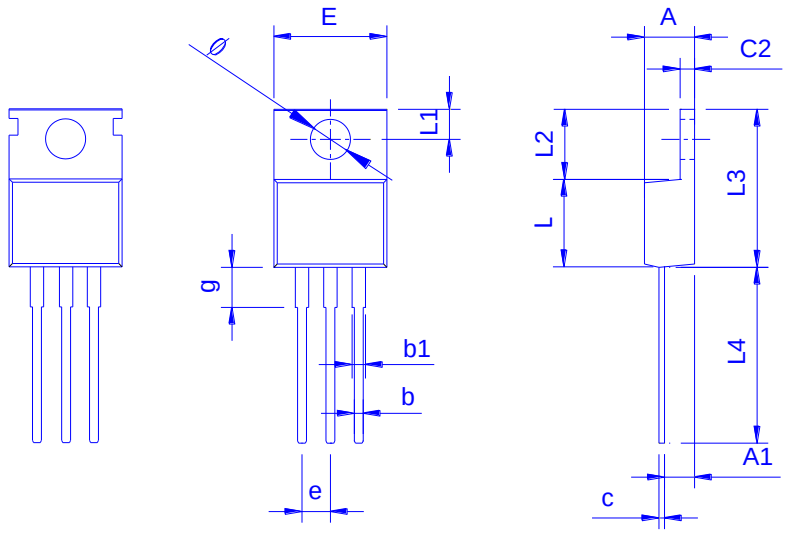
Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



Outline Drawing



Dimension in mm

Dimension	A	A1	b	b1	c	c2	E	L	L1	L2	L3	L4	Ø	e	g
Min.	4.240	2.250	0.700	1.170	0.310	1.150	9.910	8.500	2.590	6.100	14.700	12.700	3.400	2.440	2.850
Typ.	4.440	2.400	0.800	1.550	0.500	1.270	10.160	8.920	2.800	6.300	15.370	13.720	3.840	2.540	3.800
Max.	4.700	2.820	0.910	1.750	0.650	1.400	10.360	9.750	3.250	6.800	16.900	13.970	3.935	2.640	4.000

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