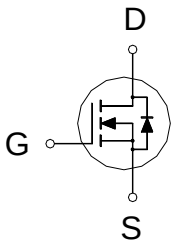
杰力科技股份有限公司
Excelliance MOS Corporation

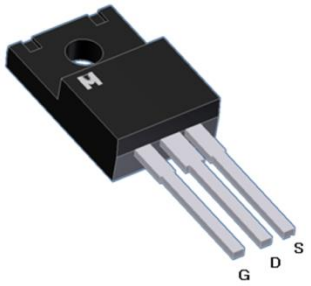
EMD11N15FN

N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV_{DSS}	150V
$R_{DSON\ (MAX.)}$	11.5mΩ
I_D	45A





UIS, Rg 100% Tested

Pb-Free Lead Plating & Halogen Free

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	45	A
	T_C = 100 °C		28	
Pulsed Drain Current[1]		I_{DM}	180	
Avalanche Current		I_{AS}	30	
Avalanche Energy	L = 0.1mH, ID=30A, RG=25Ω	E_{AS}	45	mJ
Repetitive Avalanche Energy[2]	L = 0.05mH	E_{AR}	22.5	
Power Dissipation	T_C = 25 °C	P_D	41	W
	T_C = 100 °C		16	
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	$R_{\theta JC}$		3.0	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

[1]Pulse width limited by maximum junction temperature.

[2]Duty cycle ≤ 1%

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	150			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2.0	3.0	4.0	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 120V, V_{GS} = 0V			1	μA
		V_{DS} = 100V, V_{GS} = 0V, T_J = 125 °C			25	
On-State Drain Current[1]	$I_{D(ON)}$	V_{DS} = 10V, V_{GS} = 10V	45			A
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 20A		9.3	11.5	mΩ
Forward Transconductance[1]	g_{fs}	V_{DS} = 5V, I_D = 20A		90		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 75V, f = 1MHz		4805		pF
Output Capacitance	C_{oss}			360		
Reverse Transfer Capacitance	C_{rss}			96		
Gate Resistance	R_g	V_{GS} = 15mV, V_{DS} = 0V, f = 1MHz		1.0		Ω
Total Gate Charge[1,2]	Q_g	V_{DS} = 75V, V_{GS} = 10V, I_D = 20A		75		nC
Gate-Source Charge[1,2]	Q_{gs}			16		
Gate-Drain Charge[1,2]	Q_{gd}			28		
Turn-On Delay Time[1,2]	$t_{d(on)}$	V_{DS} = 75V, I_D = 20A, V_{GS} = 10V, R_{GS} = 6Ω		22		nS
Rise Time[1,2]	t_r			60		
Turn-Off Delay Time[1,2]	$t_{d(off)}$			30		
Fall Time[1,2]	t_f			35		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Continuous Current	I_S				45	A
Pulsed Current[3]	I_{SM}				180	
Forward Voltage[1]	V_{SD}	I_F = 20A, V_{GS} = 0V			1.2	V
Reverse Recovery Time	t_{rr}	I_F = 20A, dI_F/dt = 100A / μS		120		nS
Reverse Recovery Charge	Q_{rr}			375		nC

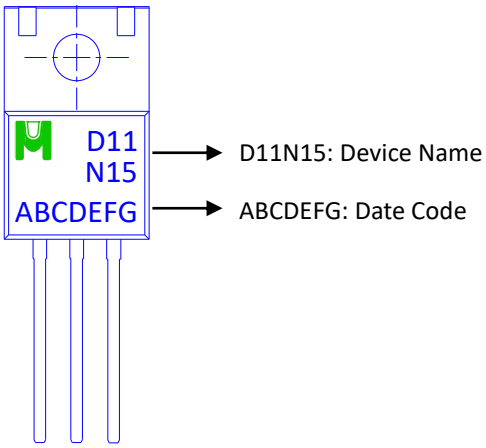
[1]Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

[2]Independent of operating temperature.

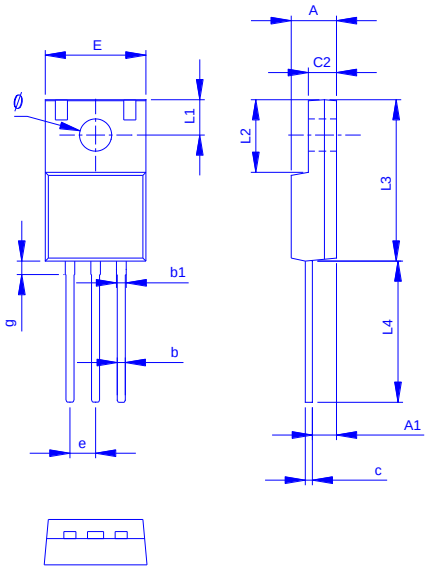
[3]Pulse width limited by maximum junction temperature.

Ordering & Marking Information:

Device Name: EMD11N15FN for TO-220F



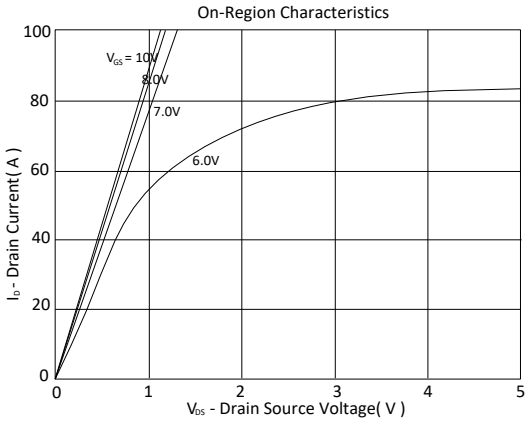
Outline Drawing

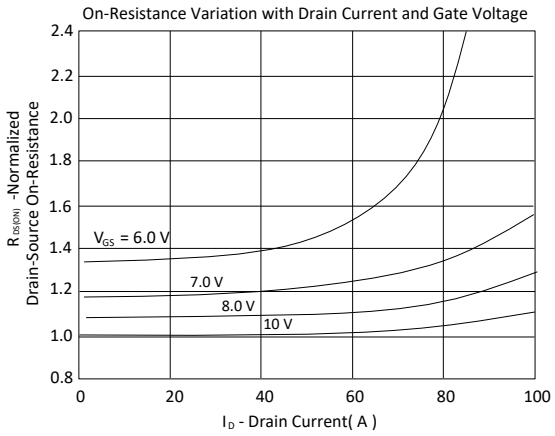


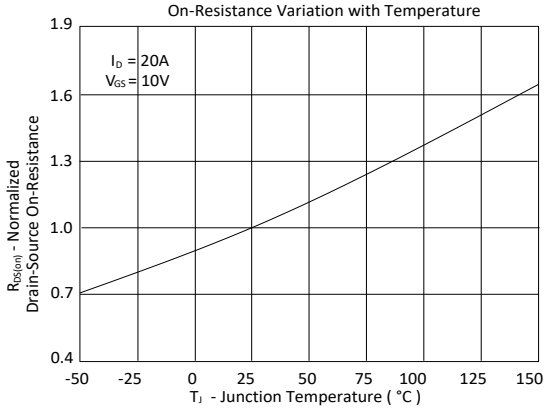
Dimension in mm

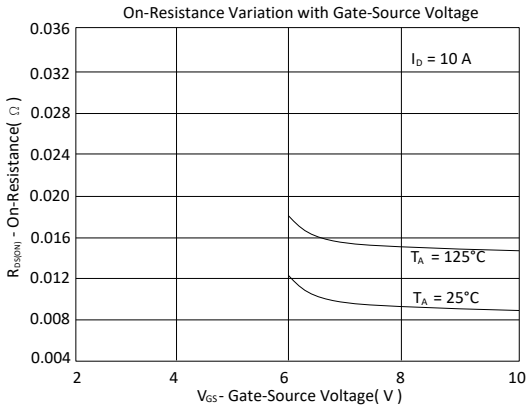
Dimension	A	A1	b	b1	c	c2	E	L1	L2	L3	L4	ø	e	g
Min.	4.30	2.50	0.60	0.60	0.45	2.50	9.70	2.90	6.30	14.70	13.40	3.00	2.35	1.00
Max.	4.70	2.70	0.80	0.90	0.60	2.90	10.30	3.10	6.70	15.30	13.80	3.40	2.75	1.20

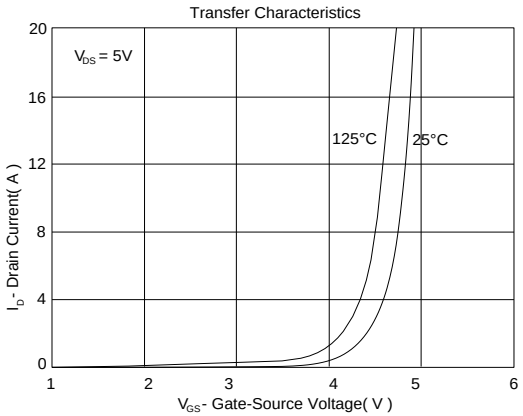
TYPICAL CHARACTERISTICS

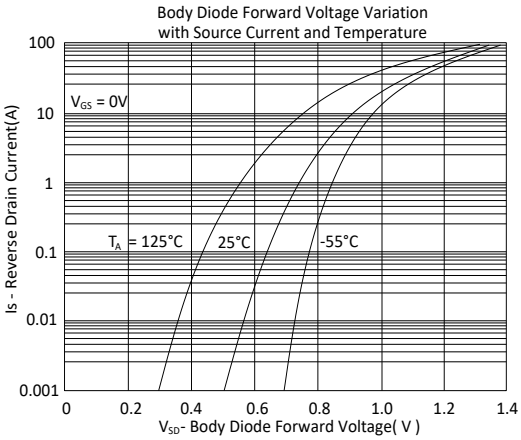




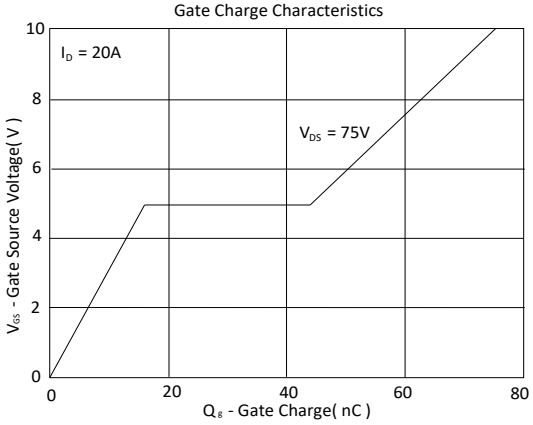




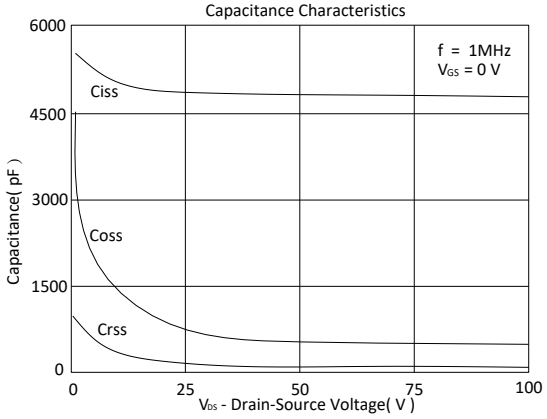




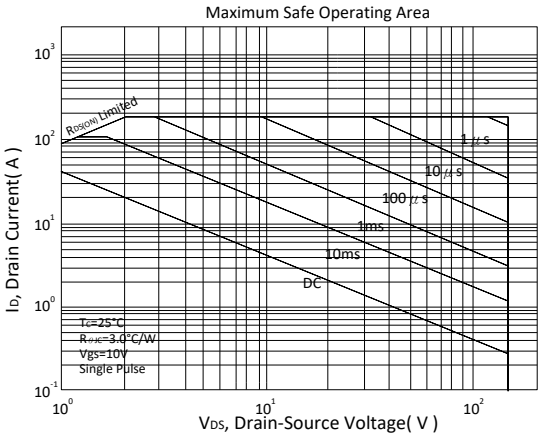
Gate Charge Characteristics



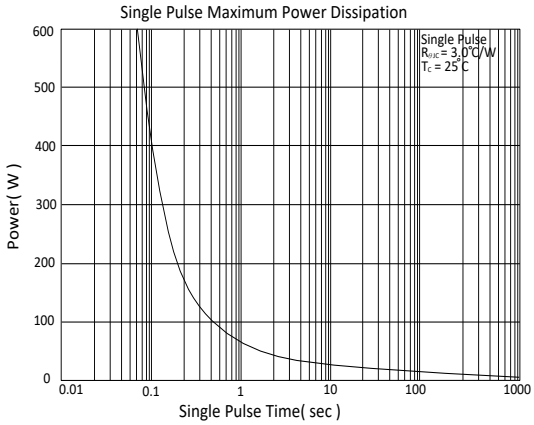
Capacitance Characteristics



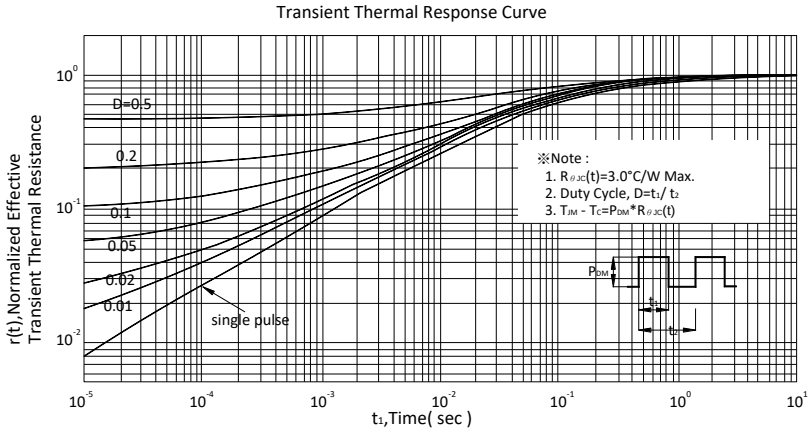
Maximum Safe Operating Area



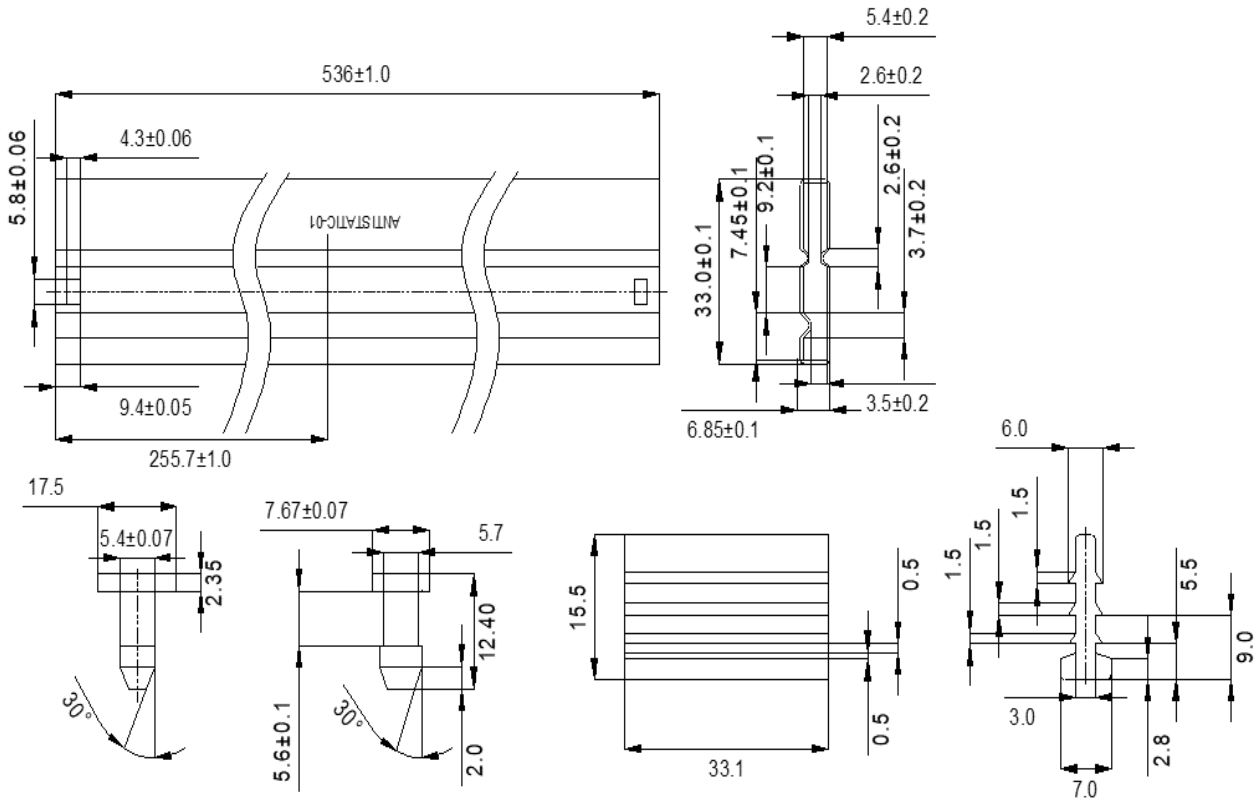
Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



◆ **Tape&Reel Information : 50pcs / Tube (1000pcs/Box)**



產品別	TO-220F / TO-220
底塞顏色	白
端塞顏色	藍
裝管方向	Pin 孔朝底塞
裝箱數	
滿管數量	50ea
管/內盒比	20:1
內盒滿箱數	1K
內盒/外箱比	4:1
外箱滿箱數	4K