

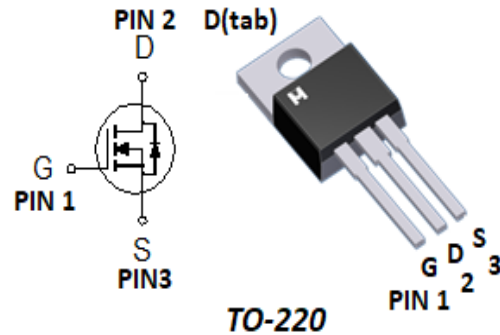
N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV _{DSS}	150V
R _{DS(on)} (MAX.)	65mΩ
I _D	35A

UIS, R_g 100% Tested

RoHS & Halogen Free & TSCA Compliant



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		V _{GS}	±16	V
Continuous Drain Current	T _C = 25 °C	I _D	35	A
	T _C = 100 °C		26	
Pulsed Drain Current ¹		I _{DM}	140	
Avalanche Current		I _{AS}	20	
Avalanche Energy	L = 0.1mH, I _{AS} =20A, R _G =25Ω	E _{AS}	20	mJ
Repetitive Avalanche Energy ²	L = 0.05mH	E _{AR}	10	
Power Dissipation	T _C = 25 °C	P _D	138	W
	T _C = 100 °C		55	
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 _{θJC}		0.9	°C / W
Junction-to-Ambient	R _{θJA}		62.5	

¹Pulse width limited by maximum junction temperature.

²Duty cycle ≤ 1%

³The value of R_{θJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C.

ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ }^\circ\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	150			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45	0.75	1.20	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 16V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 120V, V_{GS} = 0V$			1	μA
		$V_{DS} = 100V, V_{GS} = 0V, T_J = 125\text{ }^\circ\text{C}$			25	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 10V, V_{GS} = 10V$	35			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 15A$		40	55	m Ω
		$V_{GS} = 5V, I_D = 10A$		50	65	
		$V_{GS} = 3V, I_D = 3A$		60	75	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 10A$		25		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		10681		pF
Output Capacitance	C_{oss}			520		
Reverse Transfer Capacitance	C_{rss}			440		
Total Gate Charge ^{1,2}	Q_g	$V_{DS} = 80V, V_{GS} = 5V,$ $I_D = 10A$		97		nC
Gate-Source Charge ^{1,2}	Q_{gs}			21.4		
Gate-Drain Charge ^{1,2}	Q_{gd}			28		
Turn-On Delay Time ^{1,2}	$t_{d(on)}$	$V_{DS} = 75V,$ $I_D = 1A, V_{GS} = 4.5V, R_{GS} = 6\Omega$		20		nS
Rise Time ^{1,2}	t_r			115		
Turn-Off Delay Time ^{1,2}	$t_{d(off)}$			330		
Fall Time ^{1,2}	t_f			380		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$)						
Continuous Current	I_S				35	A
Pulsed Current ³	I_{SM}				140	
Forward Voltage ¹	V_{SD}	$I_F = I_S, V_{GS} = 0V$			1.3	V
Reverse Recovery Time	t_{rr}	$I_F = 20A, di_F/dt = 100A / \mu S$		60		nS
Reverse Recovery Charge	Q_{rr}				130	

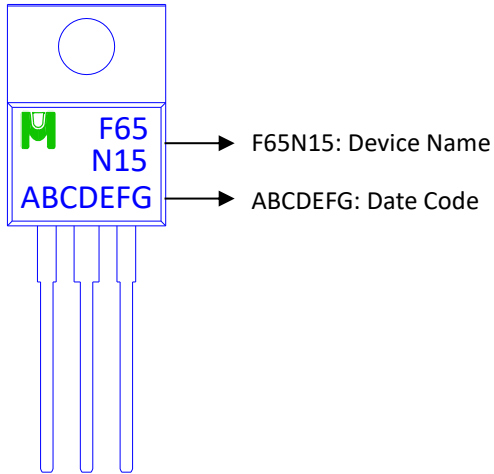
¹Pulse test : Pulse Width $\leq 300\ \mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

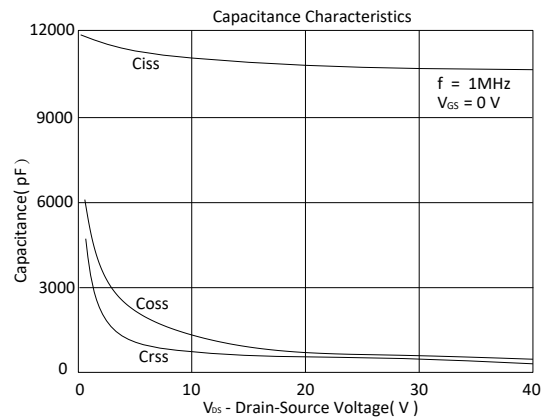
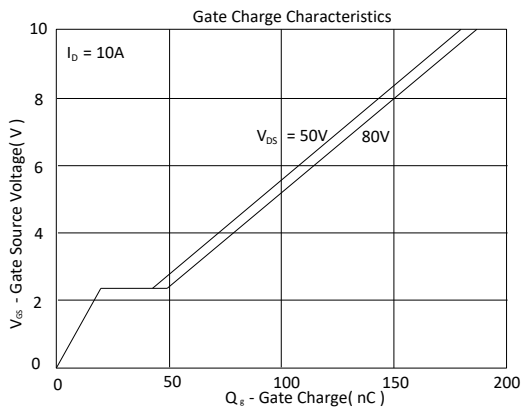
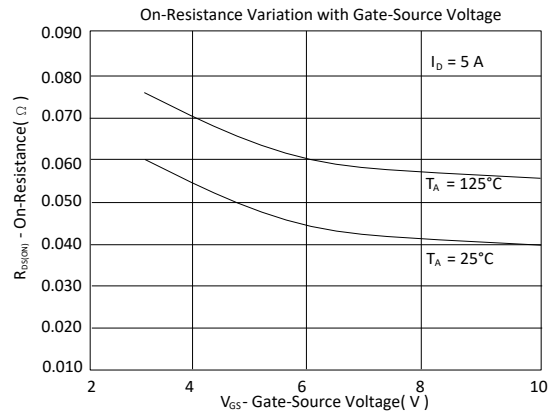
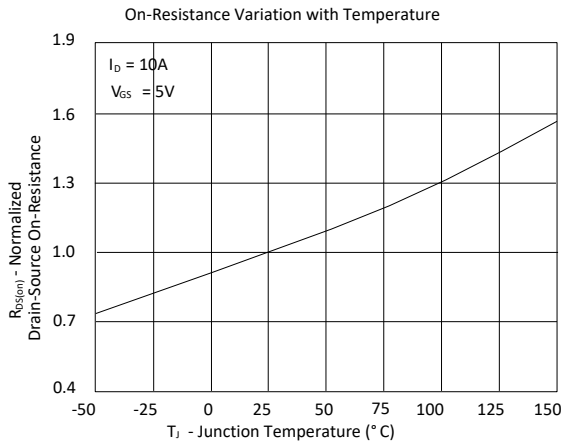
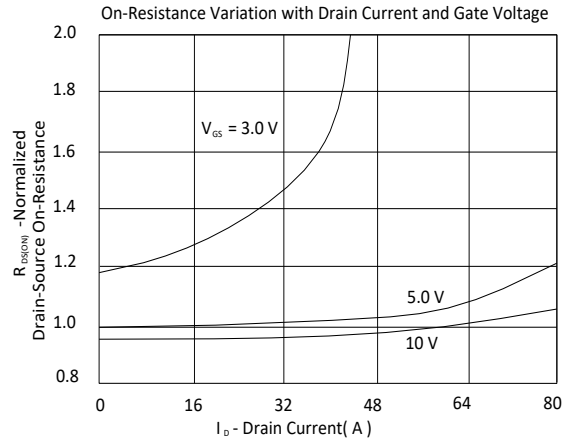
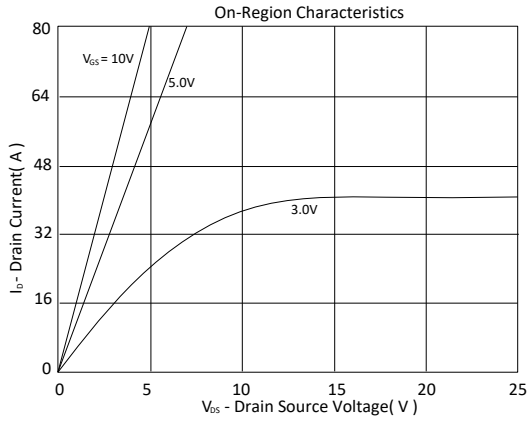
Ordering & Marking Information:

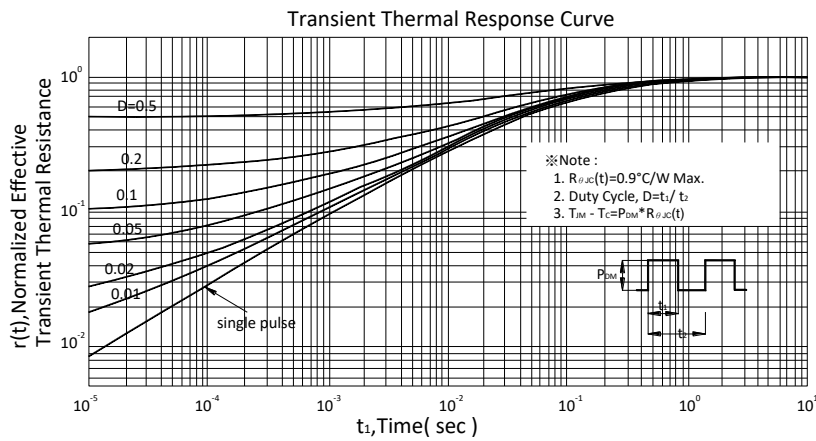
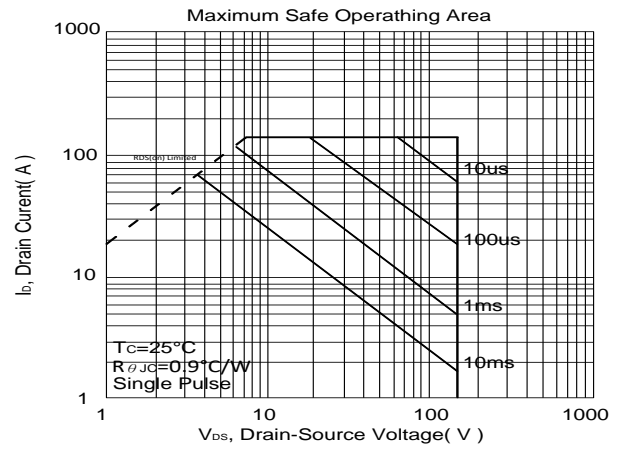
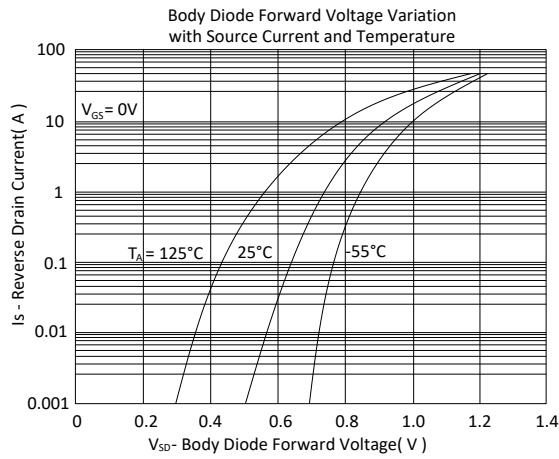
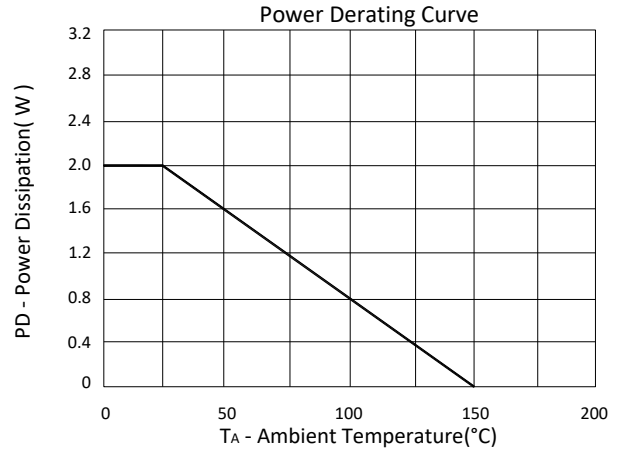
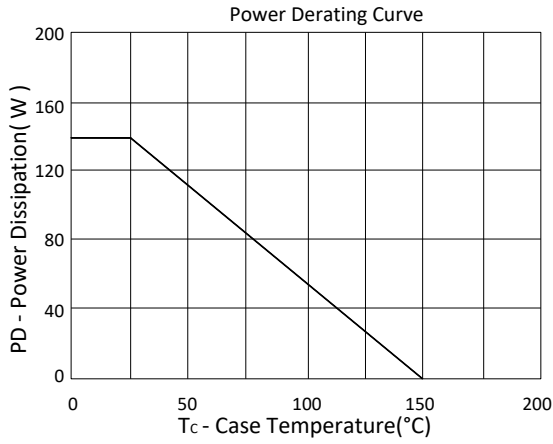
Device Name: EMF65N15E for TO-220





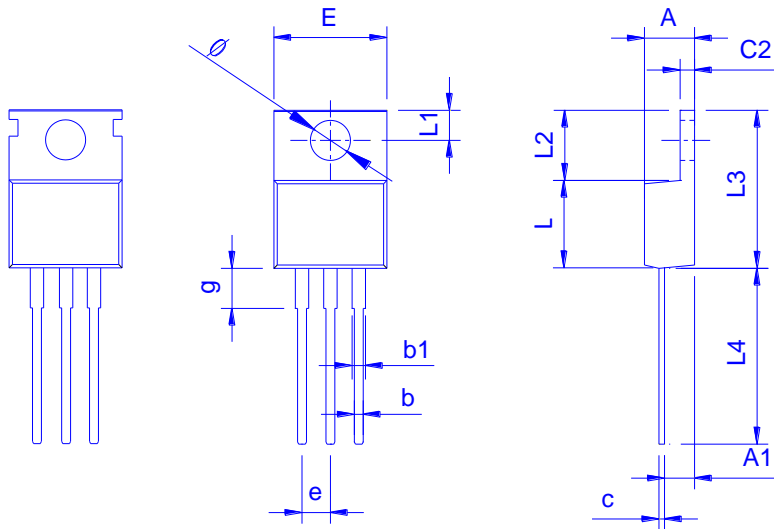
TYPICAL CHARACTERISTICS







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)

