

P-Channel Logic Level Enhancement Mode Field Effect Transistor

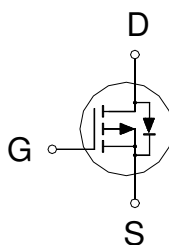
Product Summary:

BV_{DSS}	-12V
$R_{DS(on)} (MAX.)$	20m Ω
I_D	-18A

P Channel MOSFET

UIS, Rg 100% Tested

Pb-Free Lead Plating & Halogen Free



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		V_{GS}	± 8	V
Continuous Drain Current	$T_C = 25^\circ\text{C}$	I_D	-18	A
	$T_A = 25^\circ\text{C}$		-9	
	$T_C = 100^\circ\text{C}$		-12	
Pulsed Drain Current ¹		I_{DM}	-72	
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	21	W
	$T_C = 100^\circ\text{C}$		8.3	
Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	2.5	W
	$T_A = 70^\circ\text{C}$		1.6	
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	$R_{\theta JC}$		6	$^\circ\text{C} / \text{W}$
Junction-to-Ambient ³	$R_{\theta JA}$		50	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

³50 $^\circ\text{C} / \text{W}$ when mounted on a 1 in² pad of 2 oz copper.



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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-12			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.75	-1.2	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -10V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			-10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -4.5V$	-18			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -9A$		15	20	m Ω
		$V_{GS} = -2.5V, I_D = -5A$		19	25	
		$V_{GS} = -1.8V, I_D = -3A$		26	40	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -5V, I_D = -9A$		22		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -6V, f = 1MHz$		3100		pF
Output Capacitance	C_{oss}			460		
Reverse Transfer Capacitance	C_{rss}			413		
Total Gate Charge ^{1,2}	$Q_g(V_{GS}=-4.5V)$	$V_{DS} = -6V, V_{GS} = -4.5V,$ $I_D = -9A$		25.5		nC
	$Q_g(V_{GS}=-2.5V)$			15		
Gate-Source Charge ^{1,2}	Q_{gs}			2.2		
Gate-Drain Charge ^{1,2}	Q_{gd}			5.7		
Turn-On Delay Time ^{1,2}	$t_{d(on)}$	$V_{DS} = -6V,$ $I_D = -1A, V_{GS} = -4.5V, R_{GS} = 6\Omega$		20		nS
Rise Time ^{1,2}	t_r			50		
Turn-Off Delay Time ^{1,2}	$t_{d(off)}$			95		
Fall Time ^{1,2}	t_f			60		
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 = -9A, V _{GS} = 0V			-1.2	V

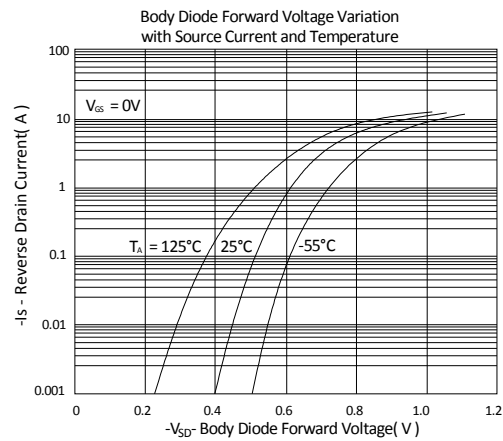
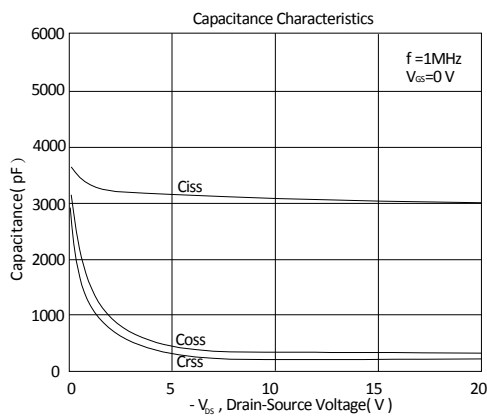
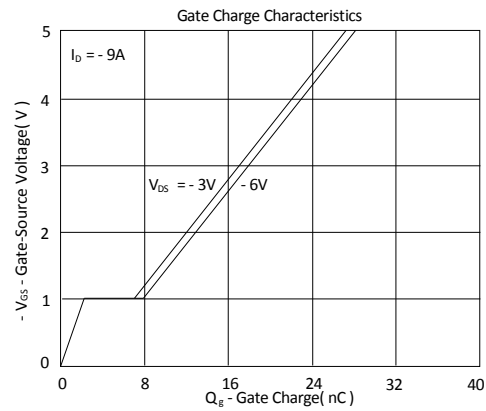
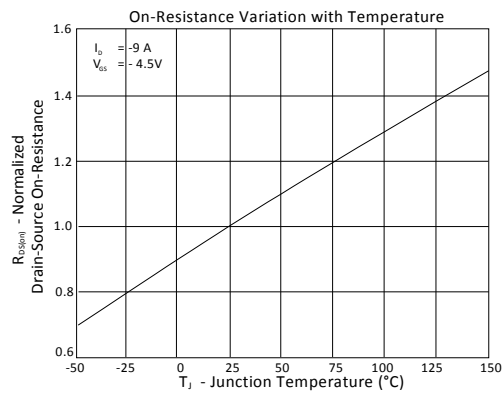
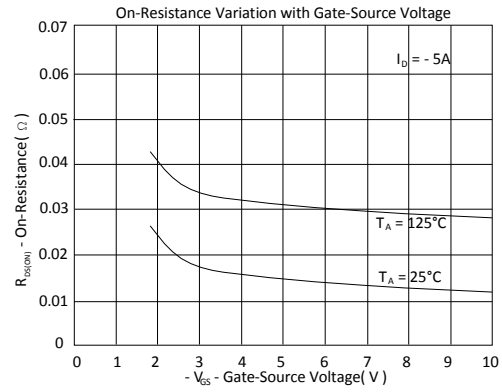
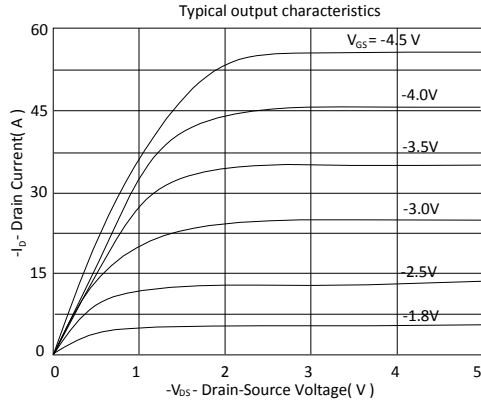
¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.

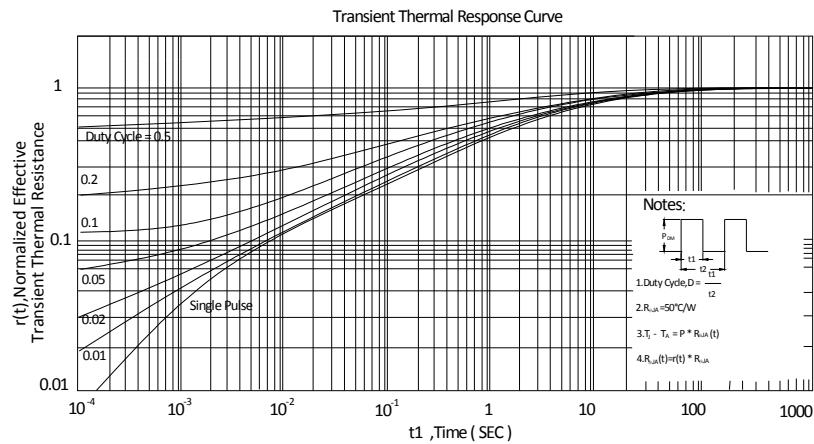
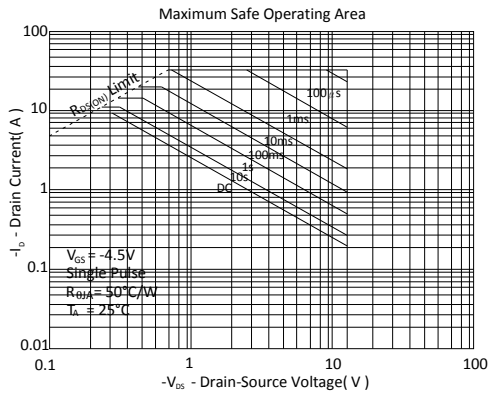
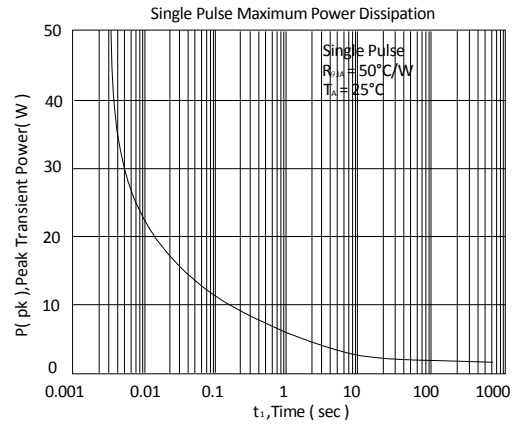
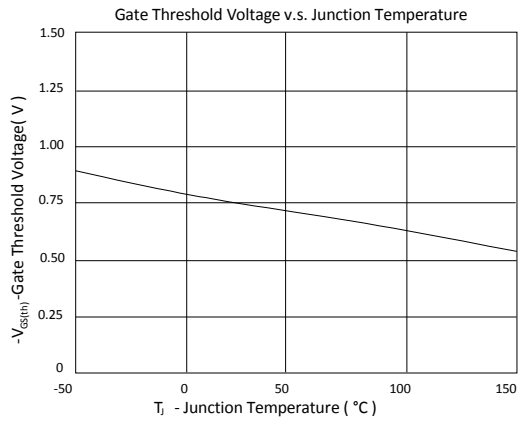
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

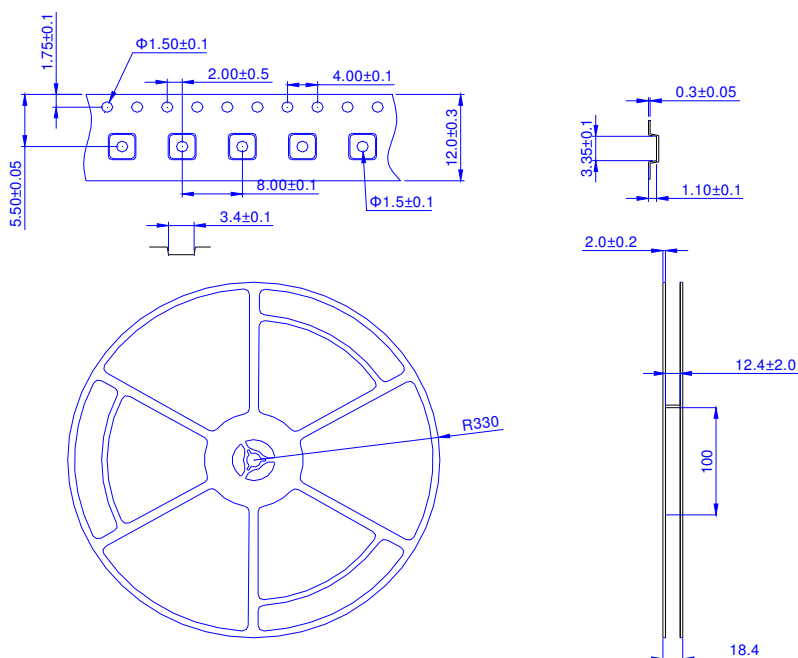
EMC will review datasheet by quarter, and update new version.

TYPICAL CHARACTERISTICS





◆ Tape&Reel Information: 5000pcs/Reel



產品別	EDFN3X3
Reel 尺寸	13"
編帶方式	FEED DIRECTION
前空格	50
後空格	50
裝箱數	
滿捲數量	5K
捲/內盒比	1 : 1
內盒滿箱數	5K
內/外箱比	10 : 1
外箱滿箱數	50K