

Rev.B Aug.-2025

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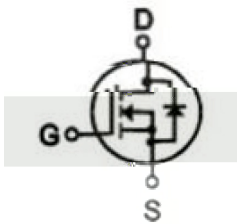
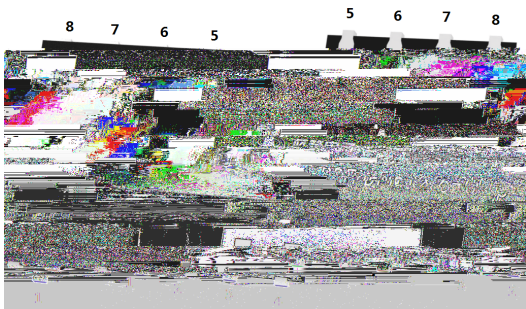
N-Channel MOSFET in a PDFN5h 6-Clip Plastic Package.

$$V_{DS}(V)=150V \quad I_D=54A$$
$$R_{DS(ON)}@10V < 12.5m \text{ (TYP. } 10.5m \text{)}$$
$$R_{DS(ON)}@6V < 18.5m \quad (TYP. 16.5m)$$

ñ f ß Â HF Product.

$\mathcal{D} \quad \mathcal{A} \cup \mathcal{H} \quad \mathcal{I} \text{ GF } 0 \text{ GF } \mathcal{C}^{\omega} \Omega^{\mathcal{H}}$

Motor drivers, DC - DC Converter.



PIN1Ã 2Ã 3Ö S

PIN4Ö G

PIN5

1. Absolute Maximum Ratings($T_a=25^\circ\text{C}$;)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	150	V
Drain Current*	$I_D(T_C=25^\circ\text{C})$	54	A
	$I_D(T_C=100^\circ\text{C})$	38	A
Drain Current – Pulsed**	I_{DM}	216	A
Gate-Source Voltage	V_{GS}	≤ 20	V
Power Dissipation	$P_D(T_C=25^\circ\text{C})$	93	W
Diode Forward Current	$I_S(T_C=25^\circ\text{C})$	54	A
Single Pulse Avalanche Energy($L=1.0\text{mH}$)	E_{AS}	450	mJ
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 175	$^\circ\text{C}$
Thermal resistance, junction – ambient*	$R_{\theta JA}$	59	$^\circ\text{C/W}$
Thermal resistance, junction – case*	$R_{\theta JC}$	1.6	$^\circ\text{C/W}$

Note:

*: Surface Mounted on 1 in2 pad area, $t \leq 10$ sec**: Pulse width ≤ 300 μs , duty cycle $\leq 2\%$

2. Electrical Characteristics($T_a=25^\circ\text{C}$;)

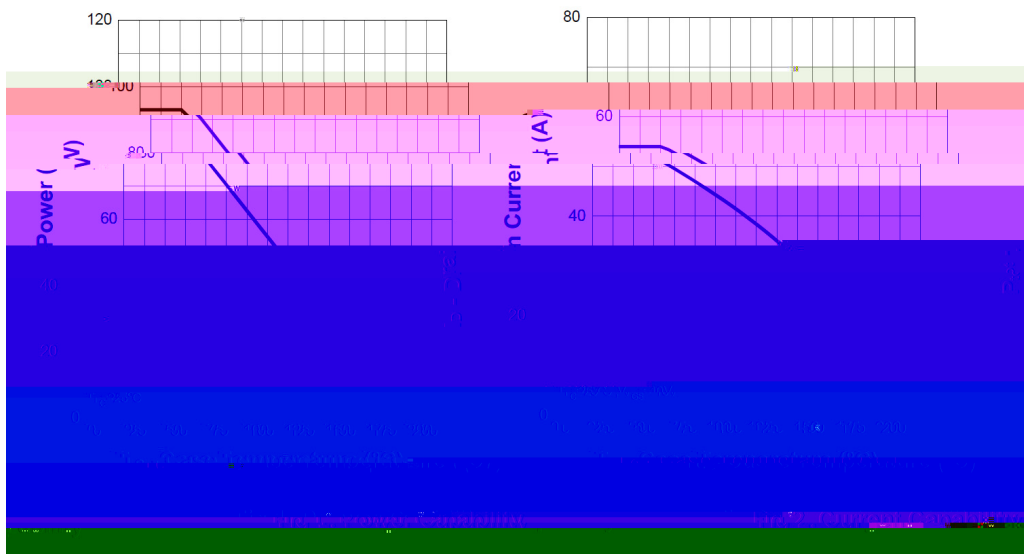
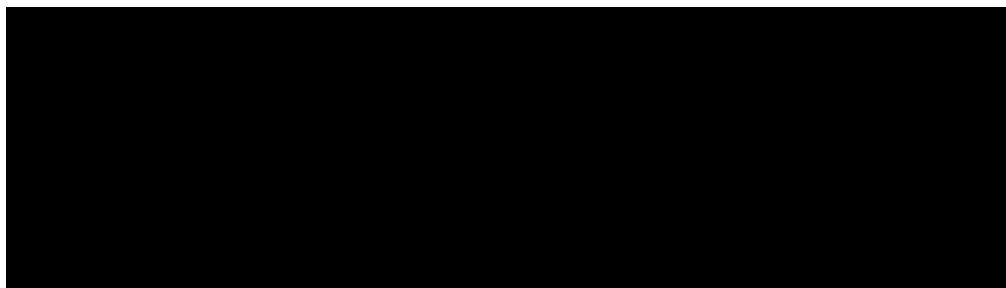
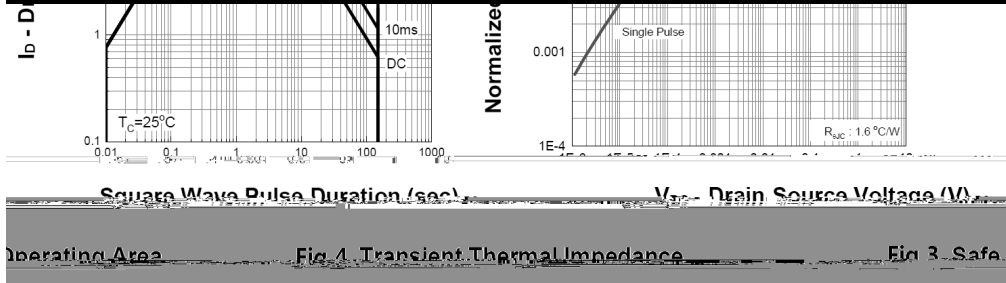
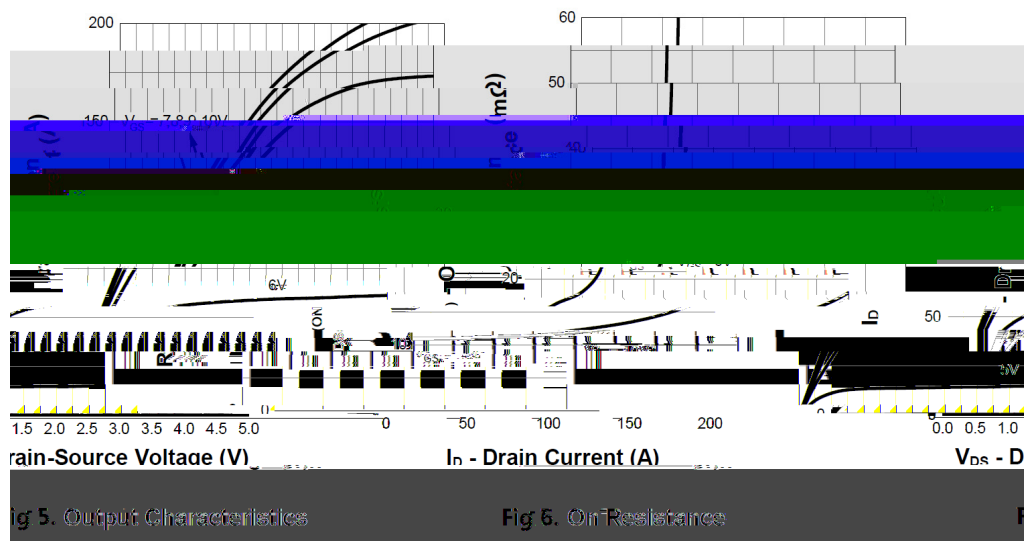
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	150			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=120\text{V}, V_{GS}=0\text{V}$			1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			-100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	2		4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}, I_D=30\text{A}$		10.5	12.5	m Ω
		$V_{GS}=6\text{V}, I_D=20\text{A}$		16.5	18.5	
Diode Forward Voltage	V_{SD}	$I_{SD} = 30\text{A}, V_{GS} = 0\text{V}$			1.3	V
Reverse Recovery Time	t_{rr}	$I_{DS} = 30\text{A}, V_{GS} = 0\text{V}$ $dI_{SD}/dt = 100\text{A}/\mu\text{s}$		77		nS
Reverse Recovery Charge	Q_{rr}			237		nC
Input Capacitance	C_{iss}	$V_{DS}=75\text{V}, V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		1548		pF
Output Capacitance	C_{oss}			227		
Reverse Transfer Capacitance	C_{rss}			14		

1 / Electrical Characteristics(Ta=25;)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Qg	VGS=10V, VDS=75V, ID=30A		23		nC
Gate Source Charge	Qgs			10		
Gate Drain Charge	Qgd			4		
Turn-On Delay Time	td(on)	VGEN=10V, VDS=75V, RL=2.5Ω, RG=3.9Ω, IDS=30A		13		ns
Turn-On Rise Time	tr			21		
Turn-Off Delay Time	td(off)			27		
Turn-Off Fall Time	tf			15		

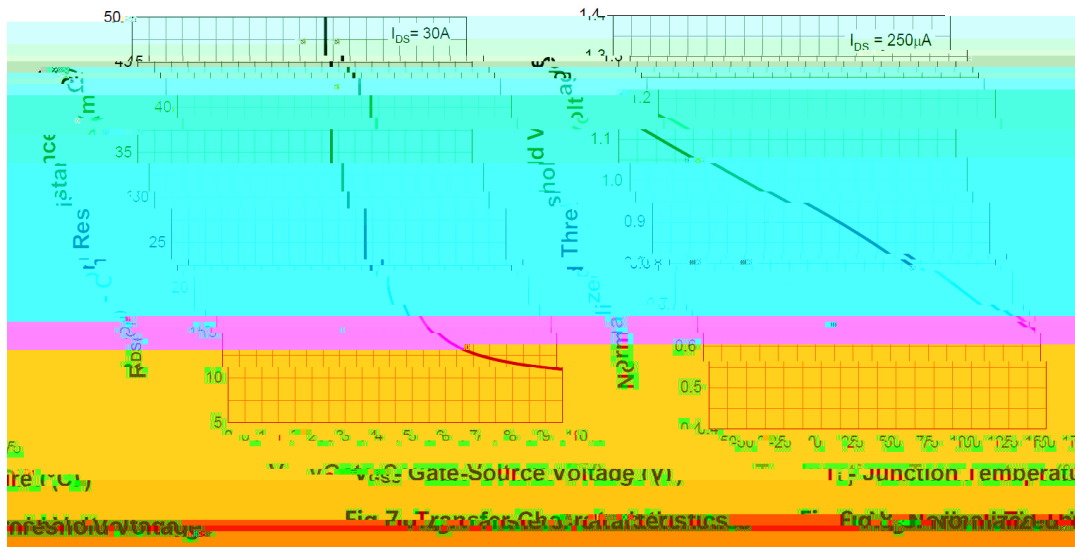
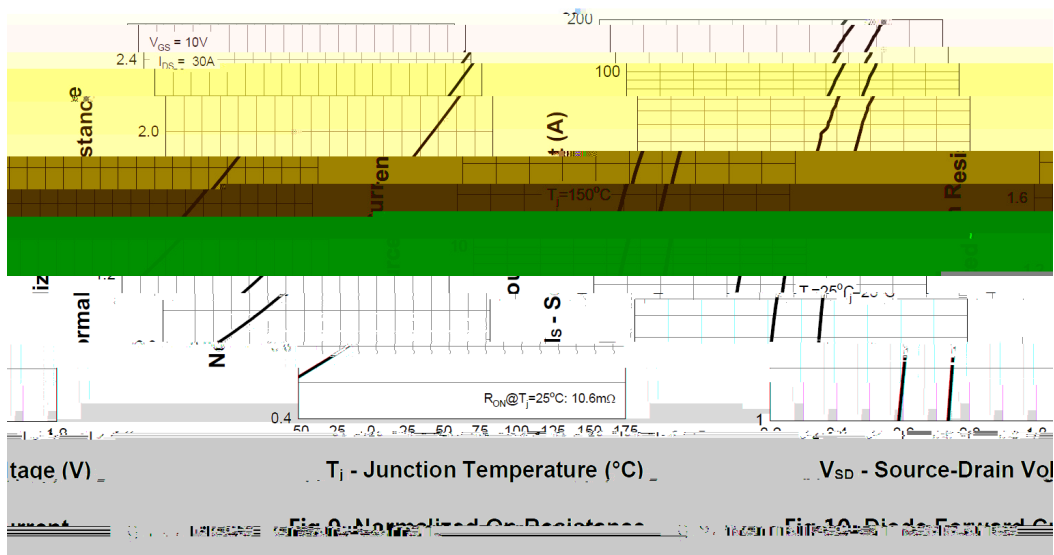
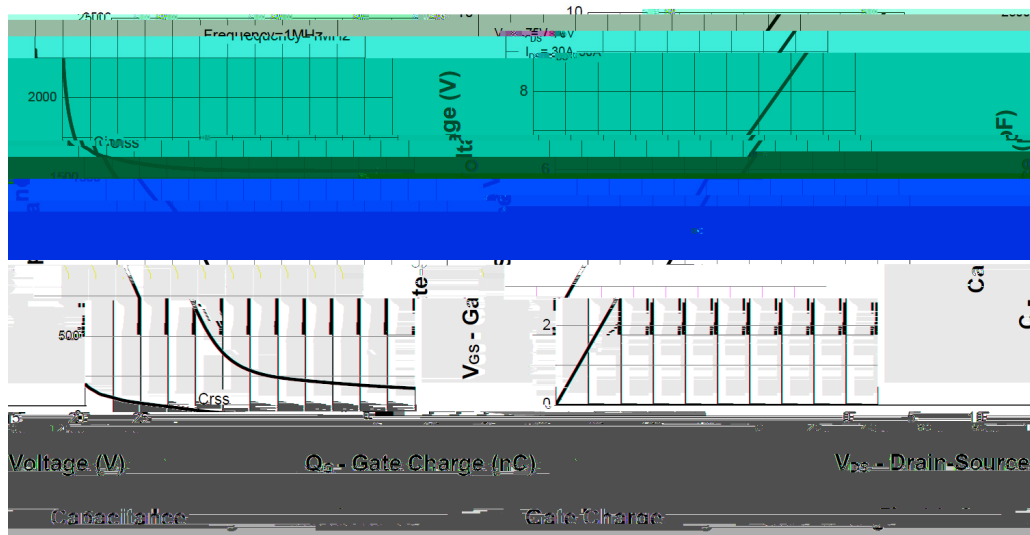


/ Electrical Characteristic Curve

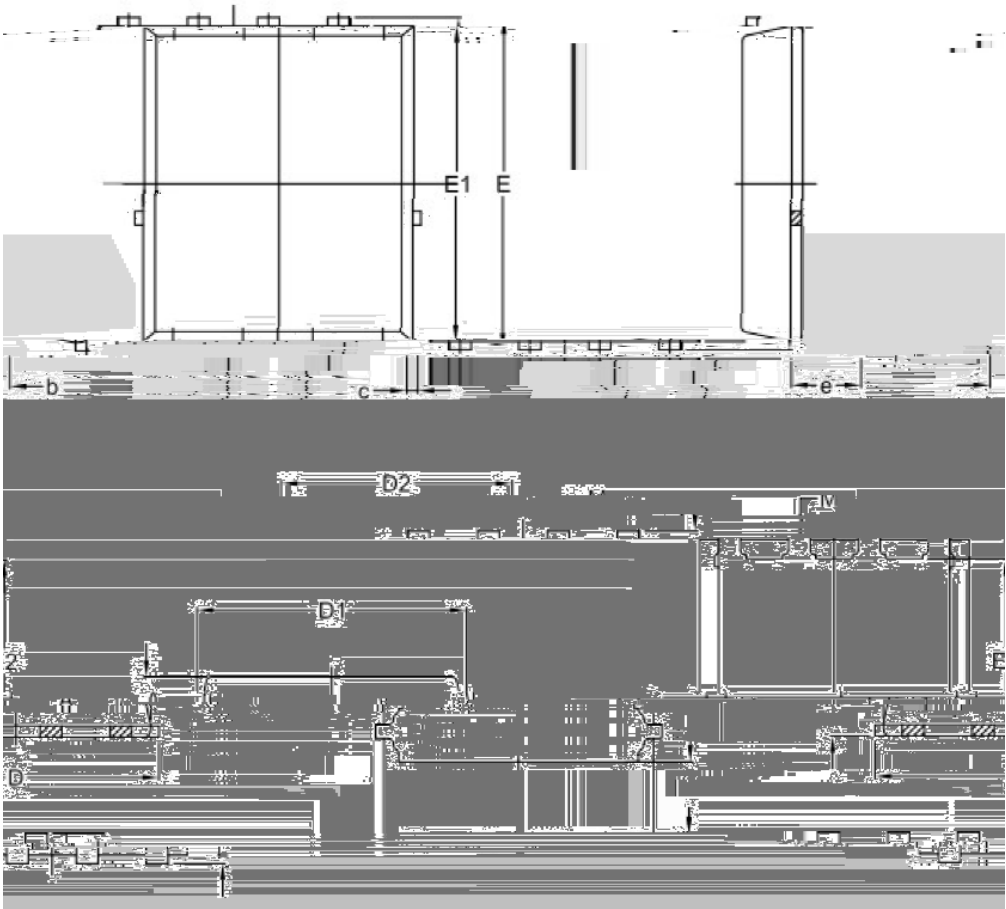
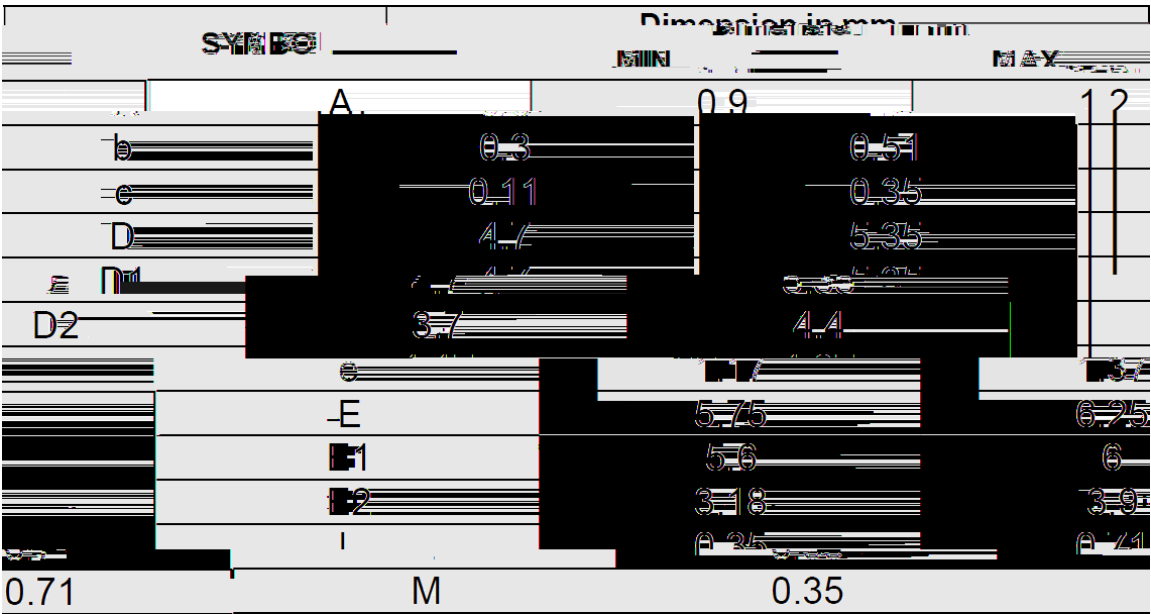




/ Electrical Characteristic Curve



⌘ / Package Dimensions



,Myf / Marking Instructions



Б " χ
EU χ Խ Յ Մ Ո
120N15SH χ Խ Յ Մ Ո
---- χ Խ 1 Բ Ղ Մ Ո 1 Զ 1 Բ Ղ Մ Ս Ր

Note χ
BR χ Company Code
120N15SH χ Product Type Code
****· Lot No. Code, code change with Lot No.


5. 温度曲线 (x/) / Temperature Profile for IR Reflow Soldering(Pb-Free)

1. 预加热

1. 温度: 150~180℃, 时间: 60~90sec;

2. 峰值温度: 245±5℃, 持续时间: 5~10sec;

3. 冷却速度: 2~10℃/sec.

Note:

1. Preheating: 150~180℃, Time: 60~90sec.

2. Peak Temp.: 245±5℃, Duration: 5~10sec.

3. Cooling Speed: 2~10℃/sec.

6. 焊锡热阻 / Resistance to Soldering Heat Test Conditions

温度: 260±5℃

时间: 10±1 sec.

Temp.: 260±5

Time: 10±1 sec

7. 卷带 / REEL

Package Type	Units ;	Dimension ;	(unit/Emm ³)
M T è Å			