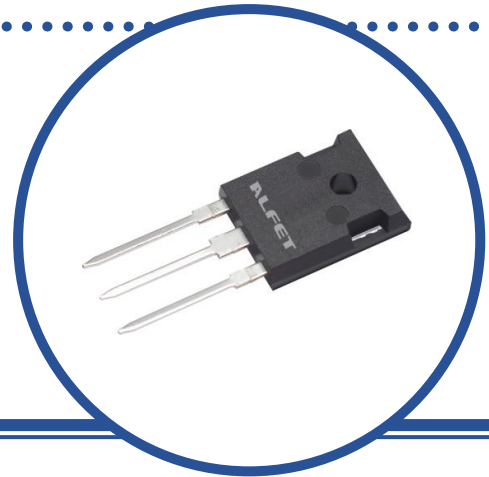


# N-CHANNEL LATERAL POWER MOSFET FOR AUDIO

## ALF08N16V/ALF08N20V

- Designed specifically for linear audio amplifier applications
- High-speed for high bandwidth amplifiers
- High voltage rating – 160V & 200V
- TO-247 plastic package
- Enhanced oscillation suppression in multi-device applications
- Complimentary P-channel available – ALF08P16V/ALF08P20V



### ABSOLUTE MAXIMUM RATINGS

( $T_C = 25^\circ\text{C}$  unless otherwise stated)

		ALF08N16V	ALF08N20V
$V_{DSS}$	Drain – Source Voltage	160V	200V
$V_{GSS}$	Gate – Source Voltage	$\pm 20\text{V}$	
$I_D$	Continuous Drain Current	8A	
$I_{DR}$	Body Drain Diode Current	8A	
$P_D$	Allowable Power Dissipation $T_{case} = 25^\circ\text{C}$	125W	
$T_{ch}$	Channel Temperature	150°C	
$T_{stg}$	Storage Temperature Range	-55 to +150°C	

### THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			1	$^\circ\text{C/W}$

Magnatec reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Magnatec is believed to be both accurate and reliable at the time of going to press. However Magnatec assumes no responsibility for any errors or omissions discovered in its use. Magnatec encourages customers to verify that datasheets are current before placing orders.

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# ALF08N16V/ALF08N20V

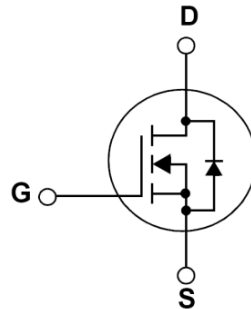
## ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units	
BV <sub>DSX</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> = -10V	ALF08N16V	160		V	
		I <sub>D</sub> = 10mA	ALF08N20V	200			
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>DS</sub> = 0	V <sub>GS</sub> = ±20V		100	μA	
V <sub>GS(off)</sub>	Gate-Source Cut-off Voltage	V <sub>DS</sub> = 10V	I <sub>D</sub> = 100mA		0.15	1.5	V
V <sub>DS(sat)*</sub>	Drain-Source Saturation Voltage	V <sub>GD</sub> = 0	I <sub>D</sub> = 8A			12	V
y <sub>fsl</sub>  *	Forward Transfer Admittance	V <sub>DS</sub> = 10V	I <sub>DS</sub> = 3A		0.7	2	S(Ω)
I <sub>DSX</sub>	Drain-Source Cut-Off Current	V <sub>GS</sub> = -10V	V <sub>DS</sub> = 160V			10	mA
			ALF08N16V	V <sub>DS</sub> = 200V			
			ALF08N20V				

\* Pulse Test: Pulse Width = 300μs, Duty Cycle ≤ 2%

## DYNAMIC CHARACTERISTICS

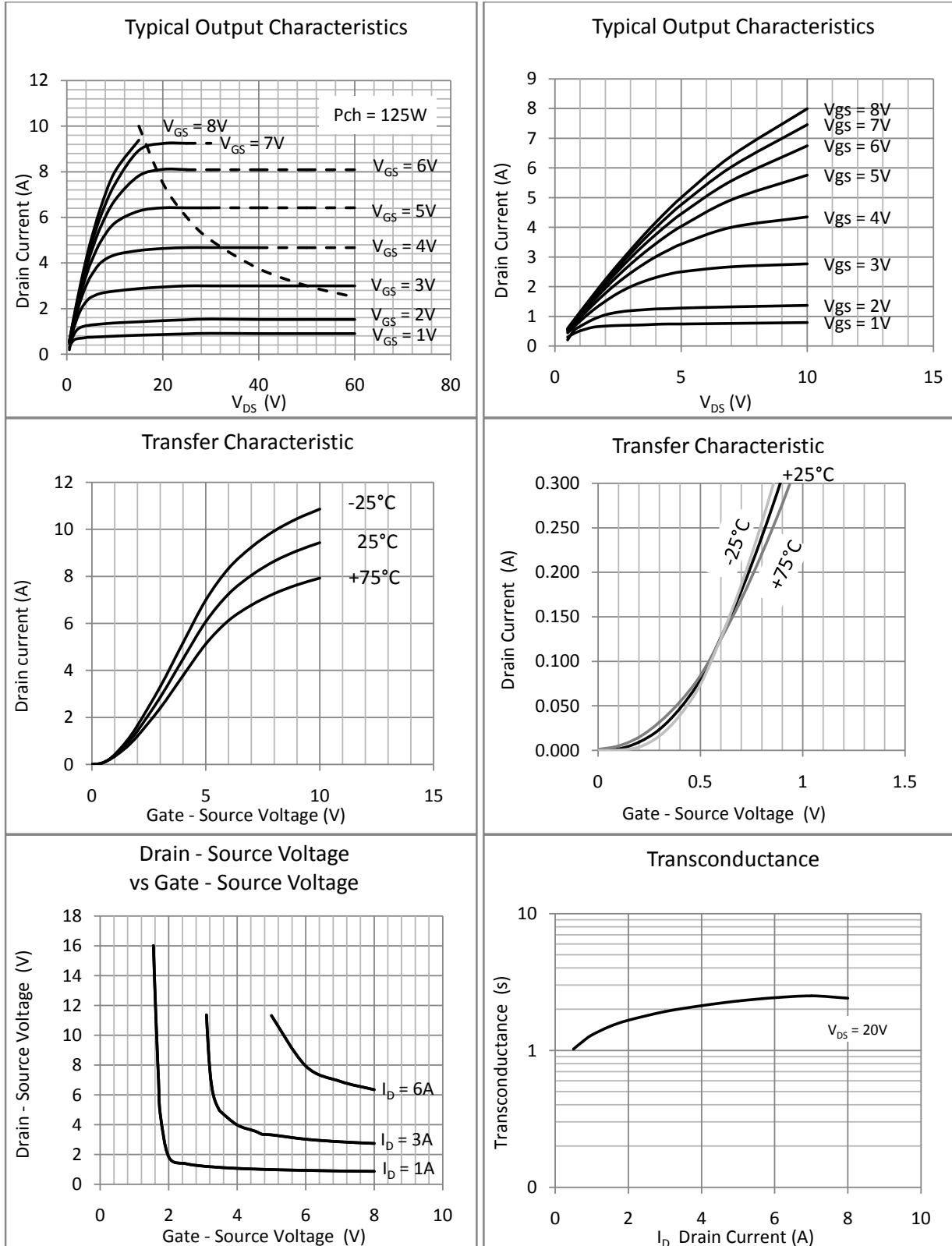
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> = 0		500		pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> = 10V		300		
C <sub>rss</sub>	Reverse Transfer Capacitance	f = 1.0MHz		10		
t <sub>on</sub>	Turn-On Time	V <sub>DS</sub> = 20V		100		ns
t <sub>off</sub>	Turn-Off Time	I <sub>D</sub> = 5A		50		



Please Note: These lateral mosfets do not include a G-S protection network and care must therefore be taken with static handling precautions and the appropriate protection in the amplifier circuit. Please refer to the application notes for more information.

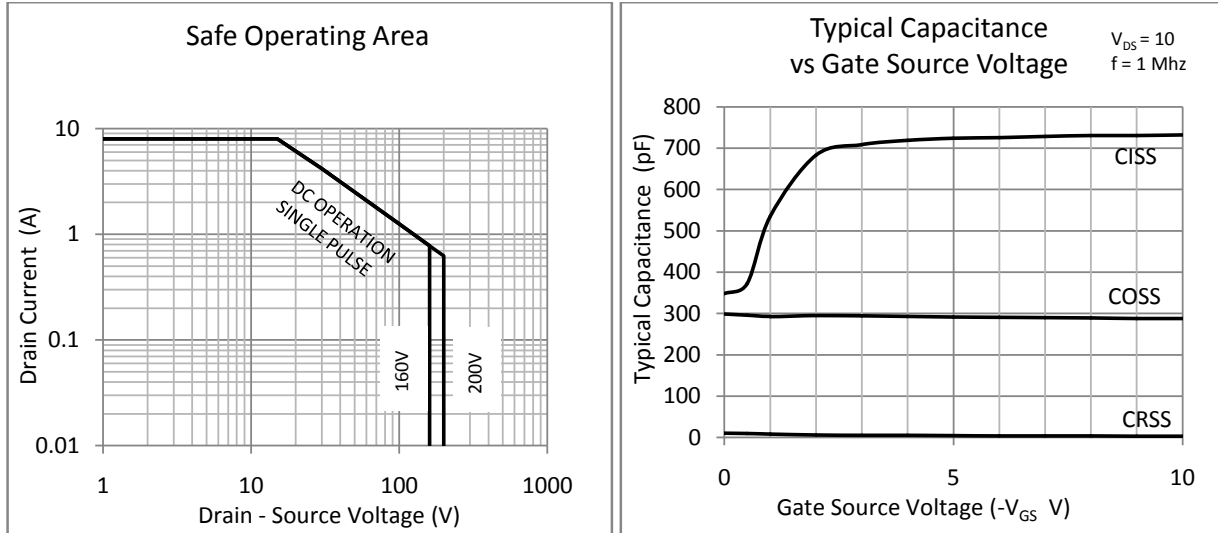
# ALF08N16V/ALF08N20V

## GENERAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)



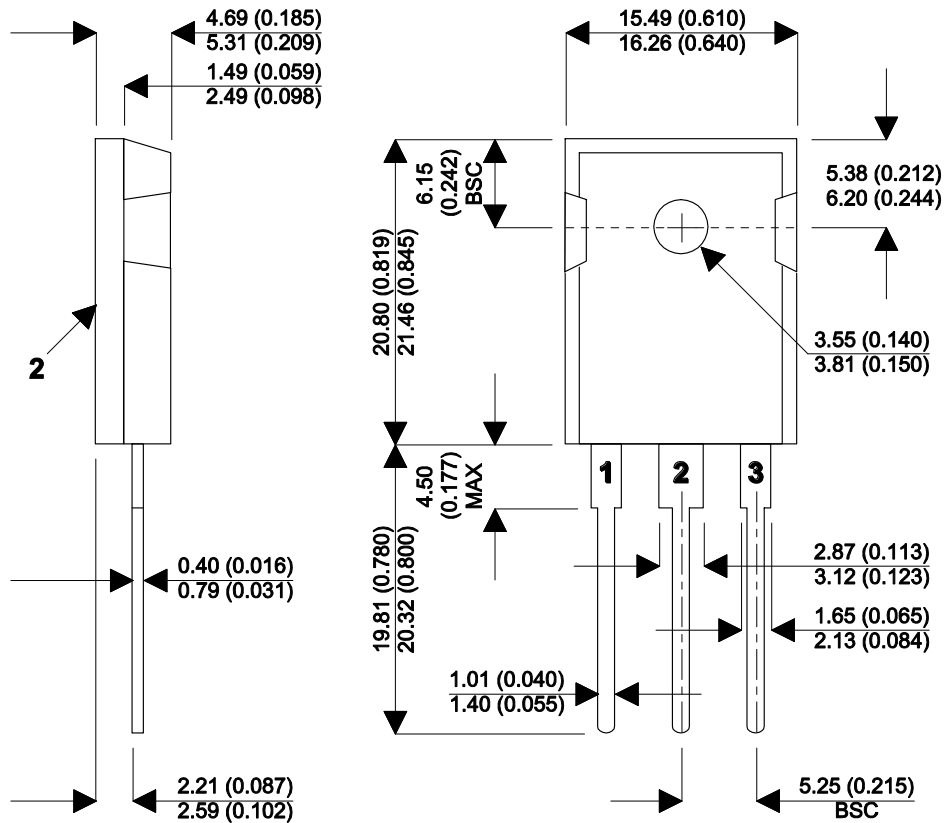
# ALF08N16V/ALF08N20V

## GENERAL CHARACTERISTICS CONTINUED ( $T_C = 25^\circ\text{C}$ unless otherwise stated)



## MECHANICAL DATA

Dimensions in mm



### TO-247

Pin 1 - Gate    Pin 2 -Source    Pin 3 - Drain