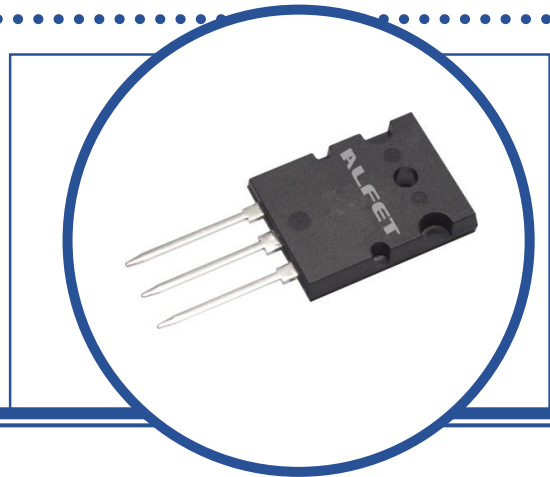


# N-CHANNEL LATERAL POWER MOSFET FOR AUDIO

## ALF16N16W/ALF16N20W

- Designed specifically for linear audio amplifier applications
- High-speed for high bandwidth amplifiers
- High voltage rating – 160V & 200V
- TO-264 plastic package
- Enhanced oscillation suppression in multi-device applications
- Complimentary P-channel available – ALF16P16W/ALF16P20W



### ABSOLUTE MAXIMUM RATINGS

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

		ALF16N16W	ALF16N20W
$V_{DSS}$	Drain – Source Voltage	160V	200V
$V_{GSS}$	Gate – Source Voltage	$\pm 20\text{V}$	
$I_D$	Continuous Drain Current	16A	
$I_{DR}$	Body Drain Diode Current	16A	
$P_D$	Allowable Power Dissipation $T_{case} = 25^\circ\text{C}$	250W	
$T_{ch}$	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			0.5	$^\circ\text{C/W}$

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.

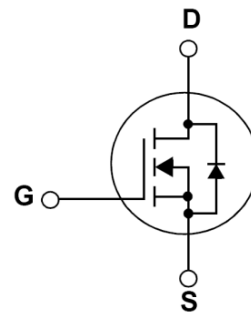
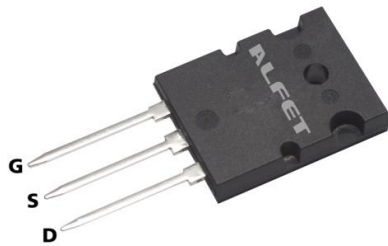
### ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units	
$BV_{DSX}$	Drain-Source Breakdown Voltage	$V_{GS} = -10\text{V}$	ALF16N16W	160		V	
		$I_D = 10\text{mA}$	ALF16N20W	200			
$I_{GSS}$	Gate-Source Leakage Current	$V_{DS} = 0$	$V_{GS} = \pm 20\text{V}$		100	$\mu\text{A}$	
$V_{GS(off)}$	Gate-Source Cut-off Voltage	$V_{DS} = 10\text{V}$	$I_D = 100\text{mA}$		0.1	1.5	V
$V_{DS(sat)*}$	Drain-Source Saturation Voltage	$V_{GD} = 0$	$I_D = 16\text{A}$		12	V	
$ y_{fs} ^*$	Forward Transfer Admittance	$V_{DS} = 10\text{V}$	$I_{DS} = 3\text{A}$		1.4	4	S(O)
$I_{DSX}$	Drain-Source Cut-Off Current	$V_{GS} = -10\text{V}$	$V_{DS} = 160\text{V}$	ALF16N16W	10	mA	
			$V_{DS} = 200\text{V}$	ALF16N20W	10		

\* Pulse Test: Pulse Width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2\%$

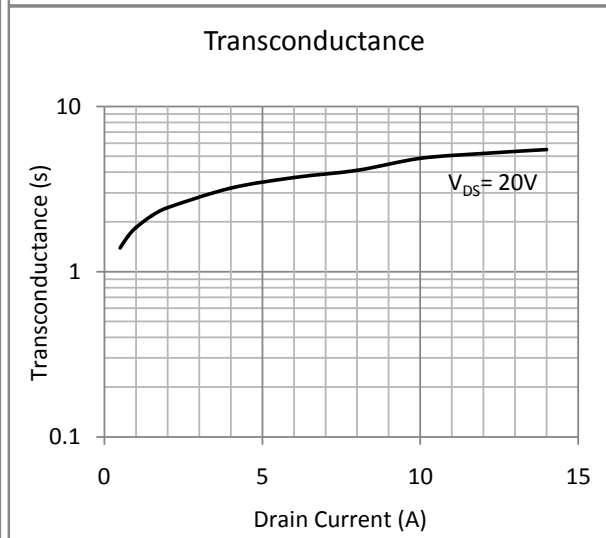
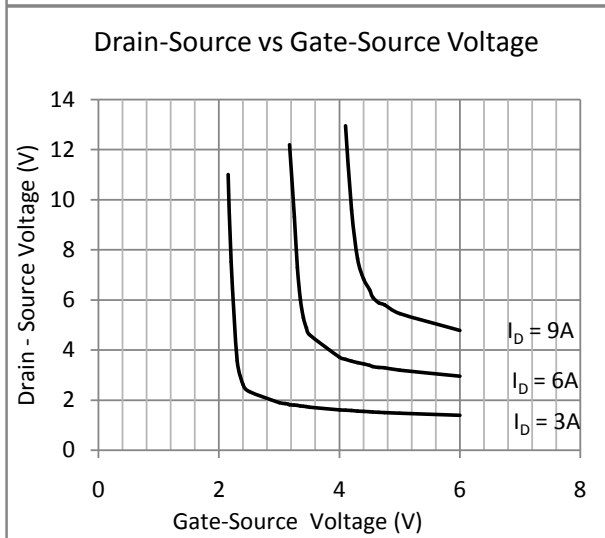
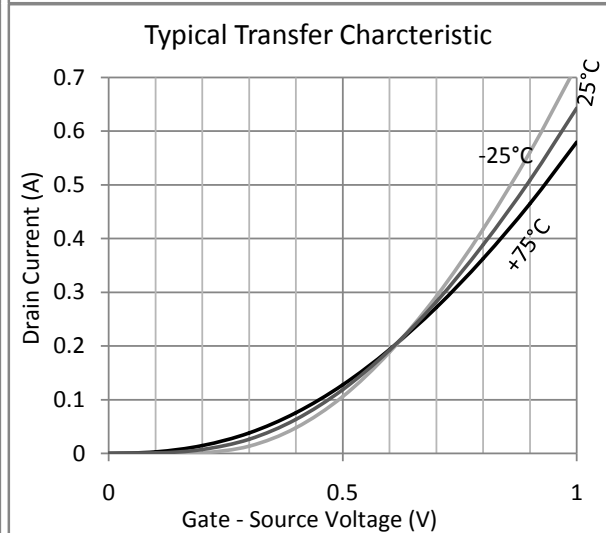
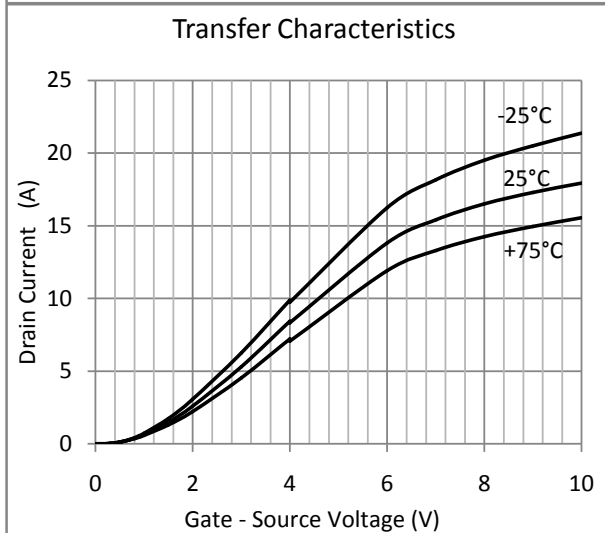
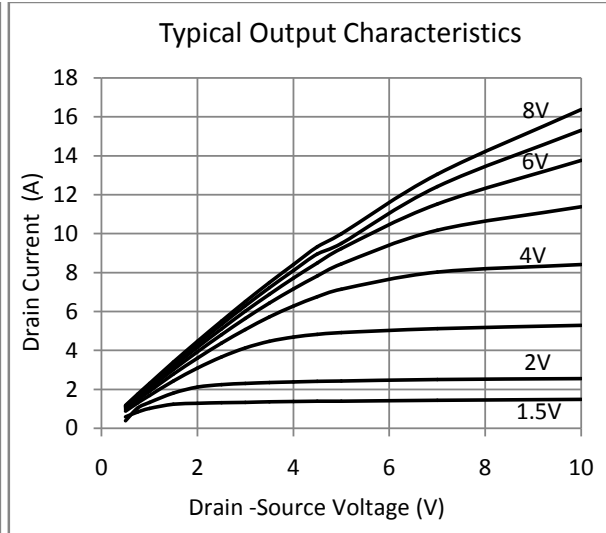
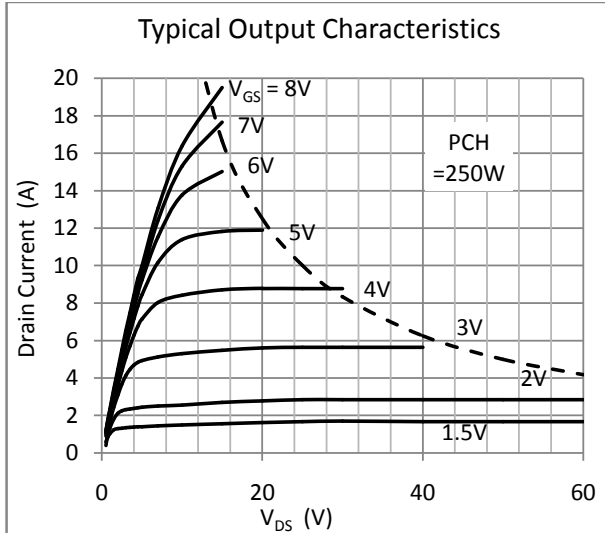
### DYNAMIC CHARACTERISTICS

$C_{iss}$	Input Capacitance	$V_{GS} = 0$	900	pF
$C_{oss}$	Output Capacitance	$V_{DS} = 10\text{V}$	500	
$C_{rss}$	Reverse Transfer Capacitance	$f = 1.0\text{MHz}$	16	
$t_{on}$	Turn-On Time	$V_{DS} = 20\text{V}$	155	ns
$t_{off}$	Turn-Off Time	$I_D = 7\text{A}$	90	

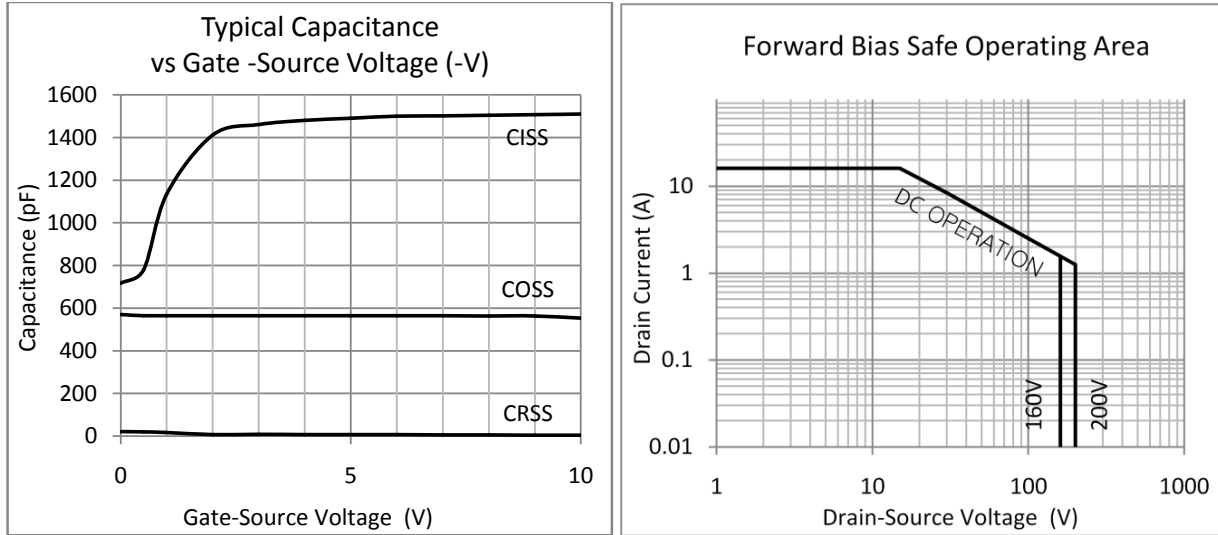


Please Note: These lateral mosfets do not include a G-S protection network and care must therefore be taken with static handling precautions and the appropriate protection in the amplifier circuit. Please refer to the application notes for more information.

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

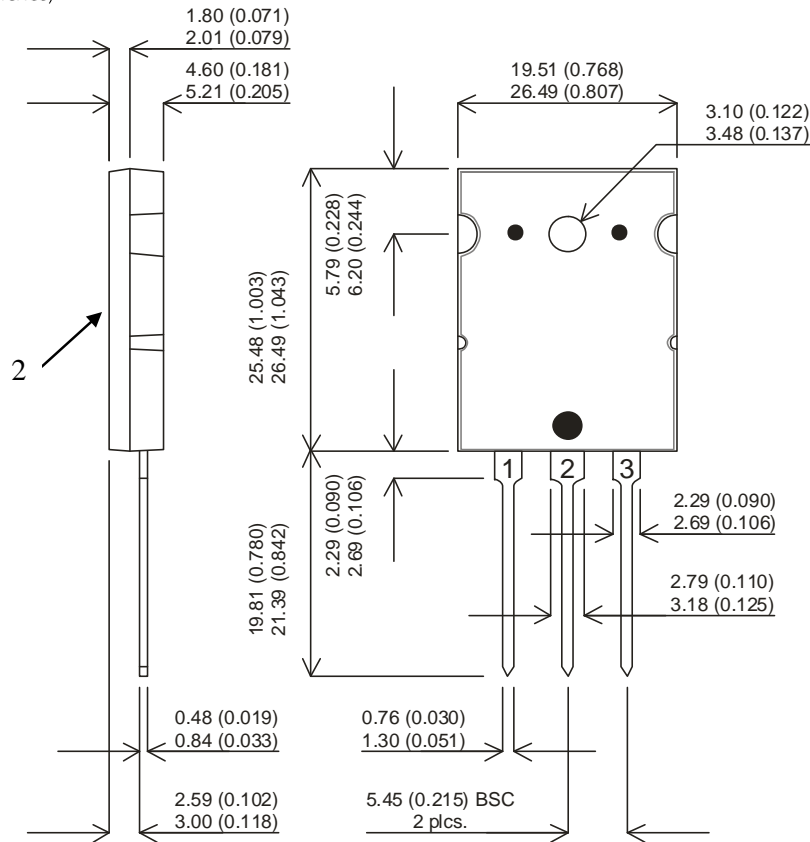


**GENERAL CHARACTERISTICS CONTINUED** ( $T_C = 25^\circ\text{C}$  unless otherwise stated)



**MECHANICAL DATA**

Dimensions in mm (Inches)



Pin1 – Gate      Pin2 – Source      Pin3 – Drain  
TO-264