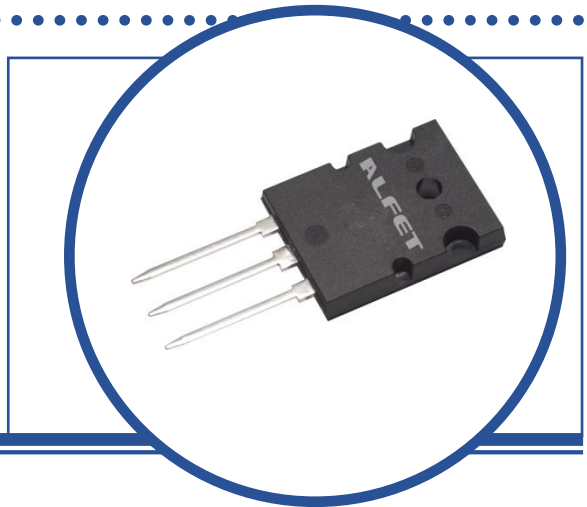


# N-CHANNEL LATERAL POWER MOSFET FOR AUDIO

## 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	$^\circ\text{C}/\text{W}$

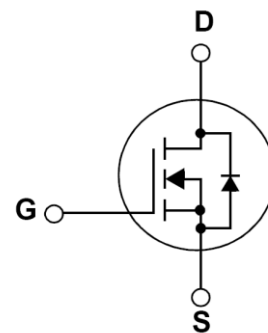
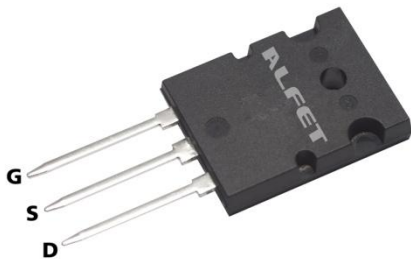
**ELECTRICAL CHARACTERISTICS** ( $T_C = 25^\circ\text{C}$  unless otherwise stated)

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( $\Omega$ )
$I_{DSX}$	Drain-Source Cut-Off Current	$V_{GS} = -10\text{V}$	$V_{DS} = 160\text{V}$		10	mA
			$V_{DS} = 200\text{V}$		10	

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

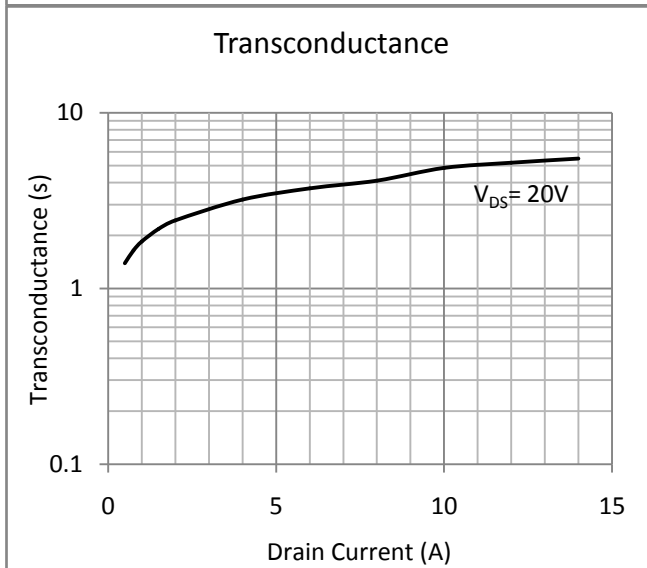
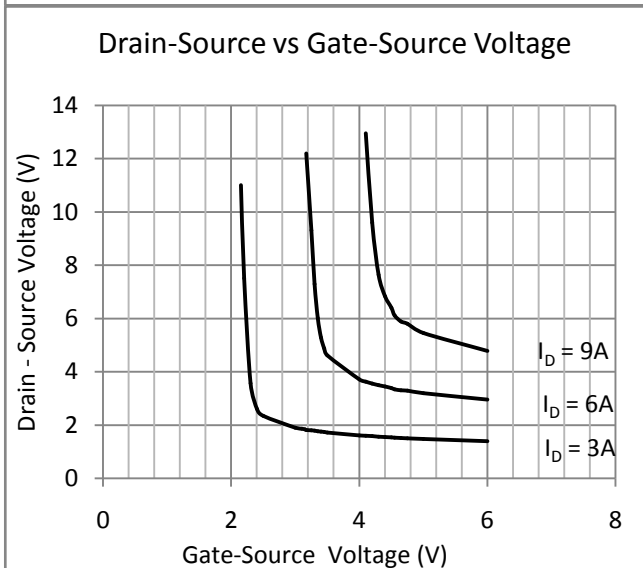
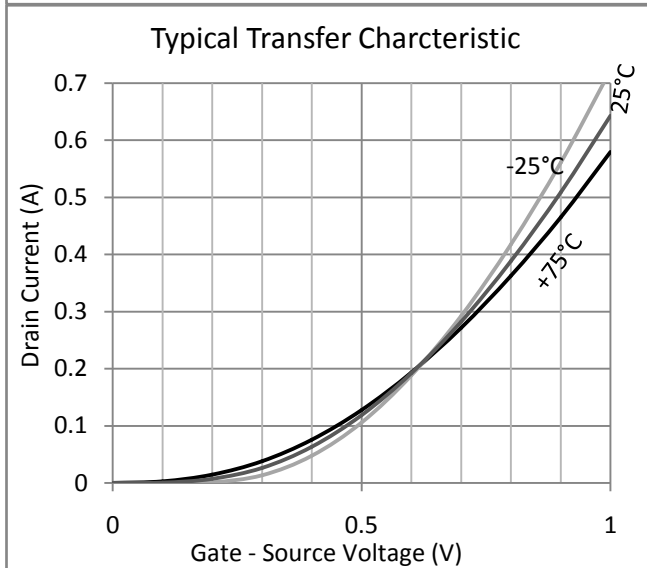
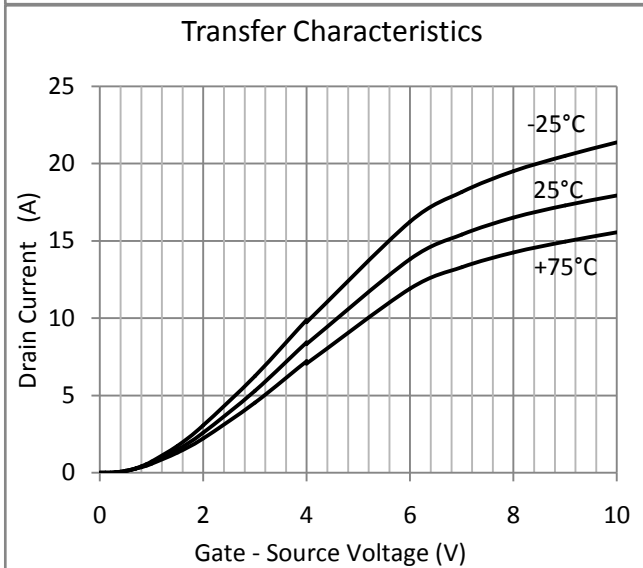
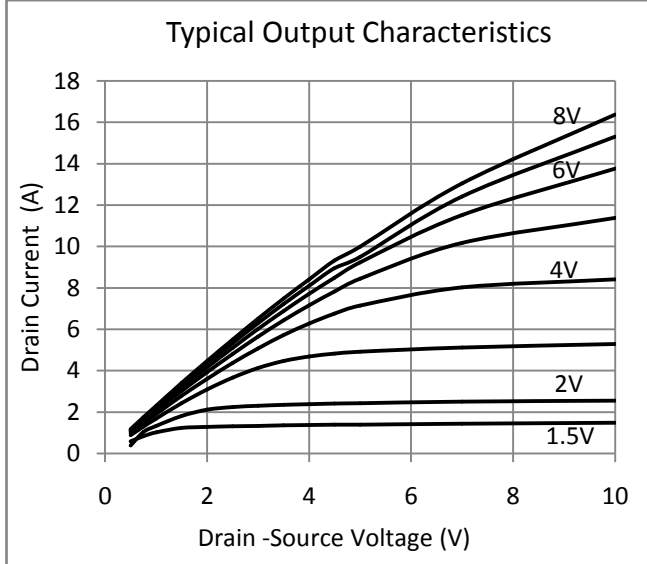
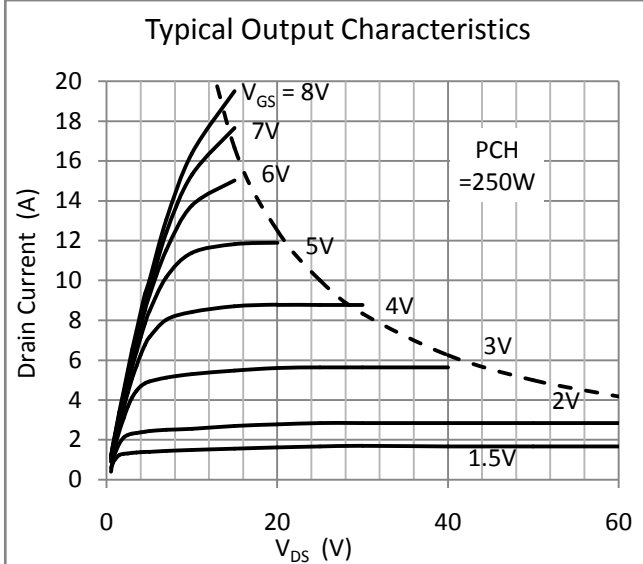
**DYNAMIC CHARACTERISTICS**

$C_{iss}$	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		

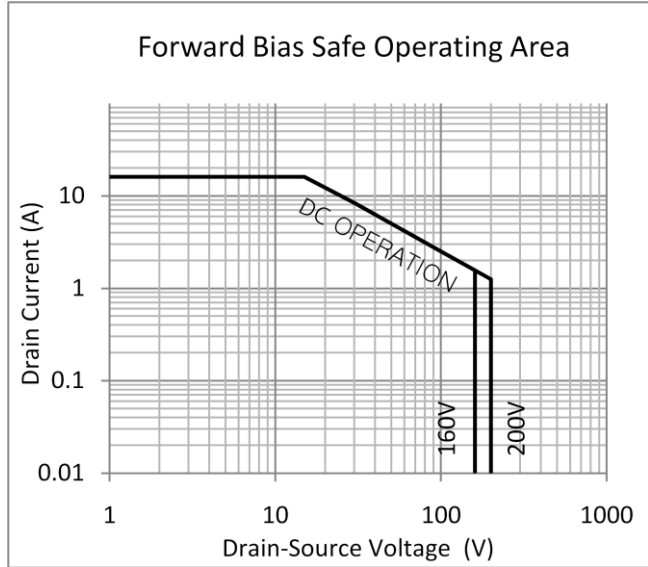
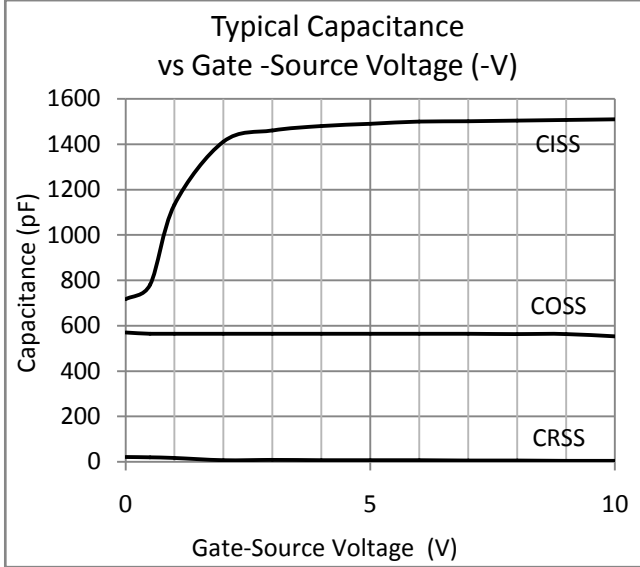


Please Note: These lateral mosfets do not include a G-S protection network and care must therefore be taken with static handling precautions and the appropriate protection in the amplifier circuit. Please refer to the application notes for more information.

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

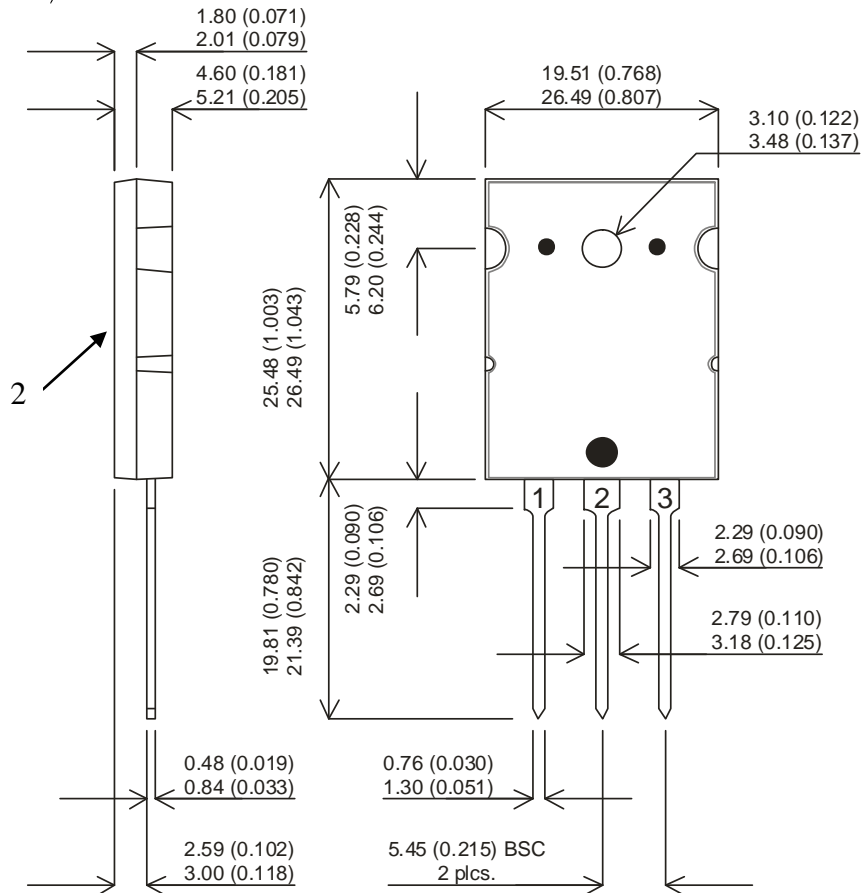


**GENERAL CHARACTERISTICS CONTINUED** ( $T_c = 25^\circ\text{C}$  unless otherwise stated)



**MECHANICAL DATA**

Dimensions in mm (Inches)



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