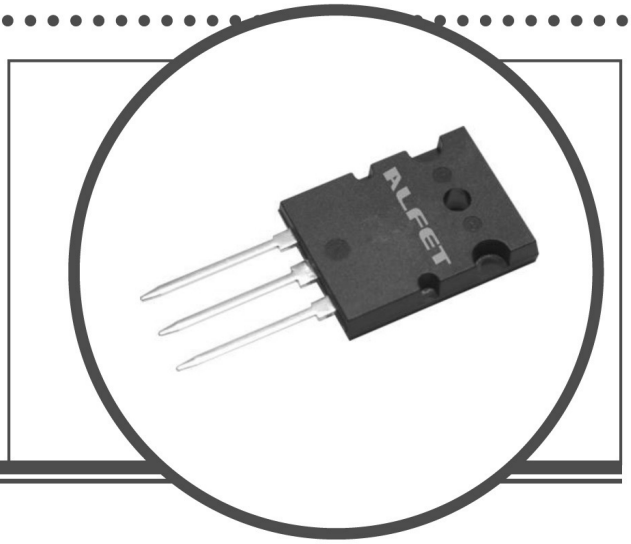
N-CHANNEL LATERAL POWER MOSFET FOR AUDIO

ACD101NDD/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°C unless otherwise stated)

V_{DSS}	Drain – Source Voltage		200V
V_{GSS}	Gate – Source Voltage		±20V
I_D	Continuous Drain Current		16A
I_{DR}	Body Drain Diode Current		16A
P_D	Allowable Power Dissipation	T_{case} = 25°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	°C/W

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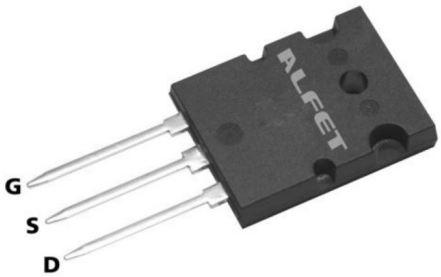
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

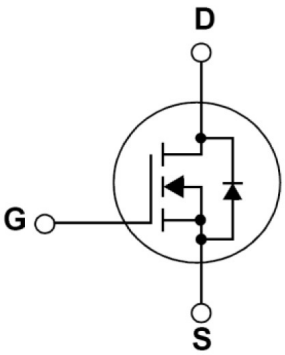
Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
BV_{DSX}	Drain-Source Breakdown Voltage	V_{GS} = -10V I_D = 10mA	 ALF16N20W	 200			V
I_{GSS}	Gate-Source Leakage Current	V_{DS} = 0	V_{GS} = ±20V			100	µA
$V_{GS(off)}$	Gate-Source Cut-off Voltage	V_{DS} = 10V	I_D = 100mA	0.1		1.5	V
$V_{DS(sat)}$*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

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

DYNAMIC CHARACTERISTICS

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



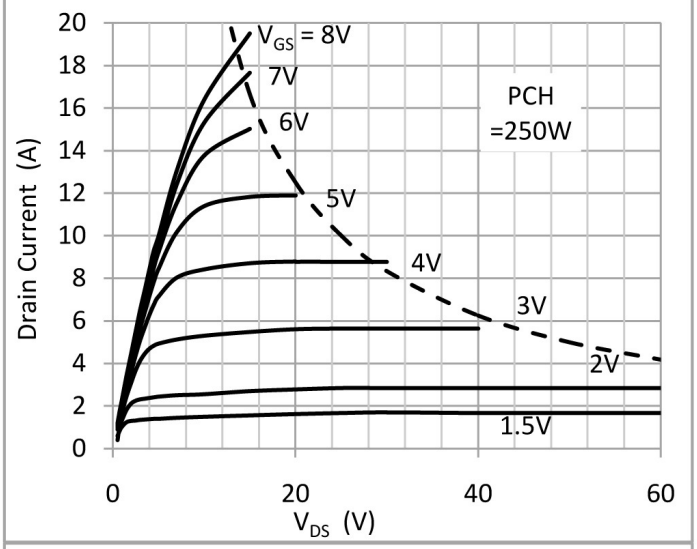


Please Note: These lateral mosfets do not include a G-S protection network and care must therefore be taken with static handling precautions and the appropriate protection in the amplifier circuit. Please refer to the application notes for more information.

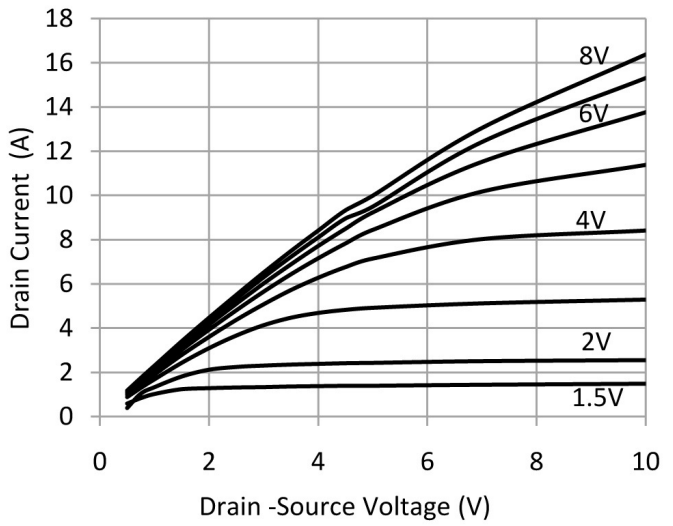
ACD101NDD/ALF16N20W

GENERAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

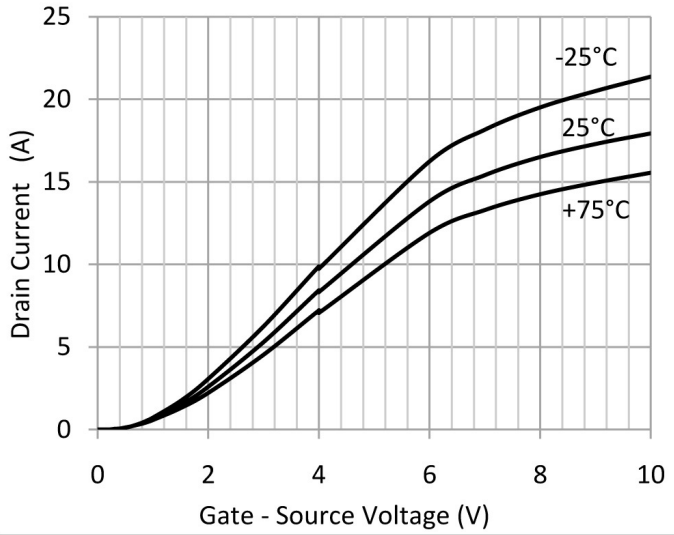
Typical Output Characteristics



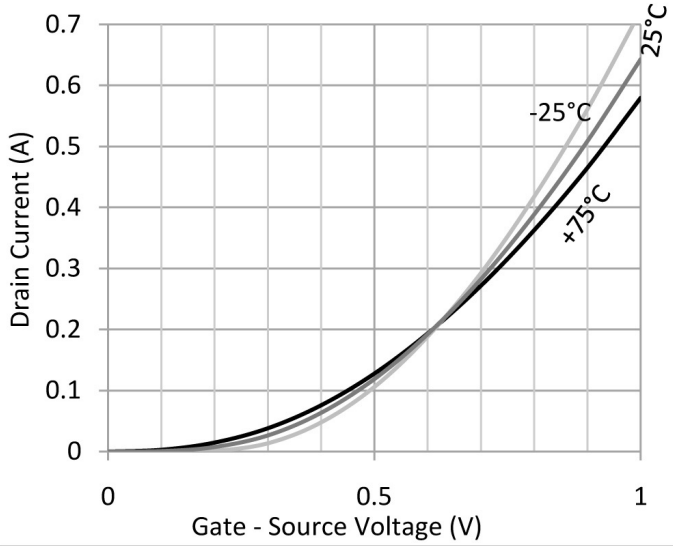
Typical Output Characteristics



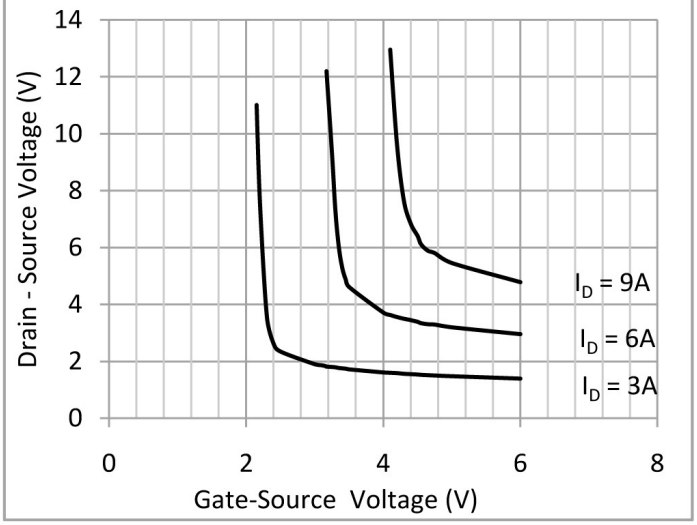
Transfer Characteristics



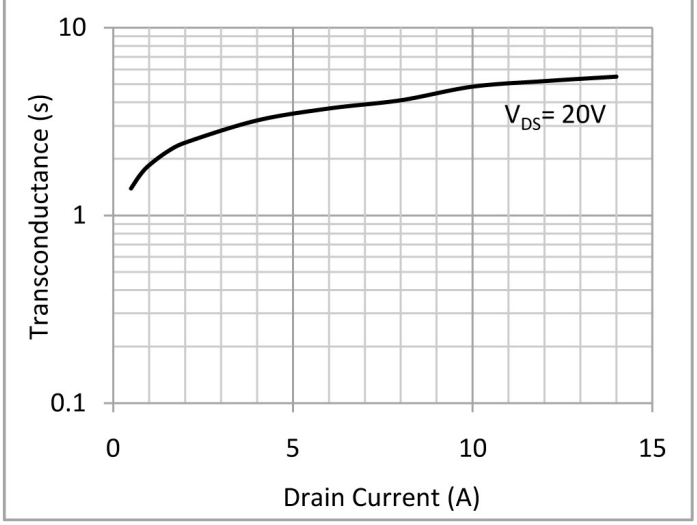
Typical Transfer Charcteristic



Drain-Source vs Gate-Source Voltage



Transconductance



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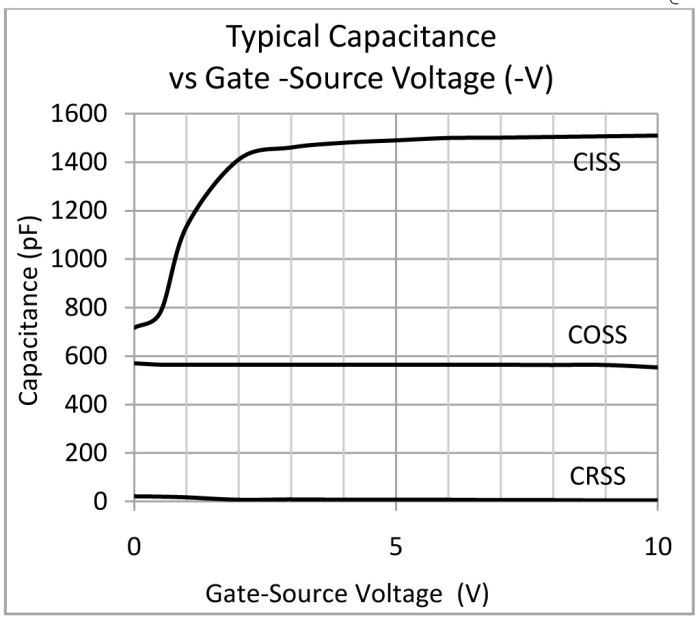
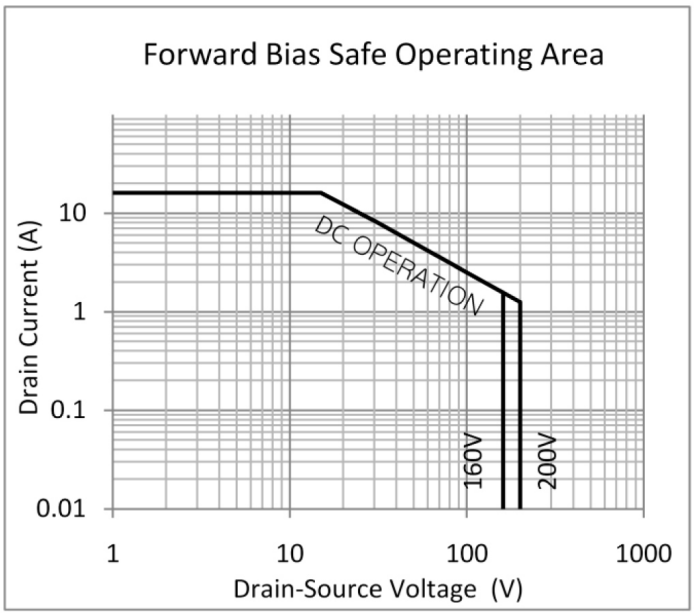
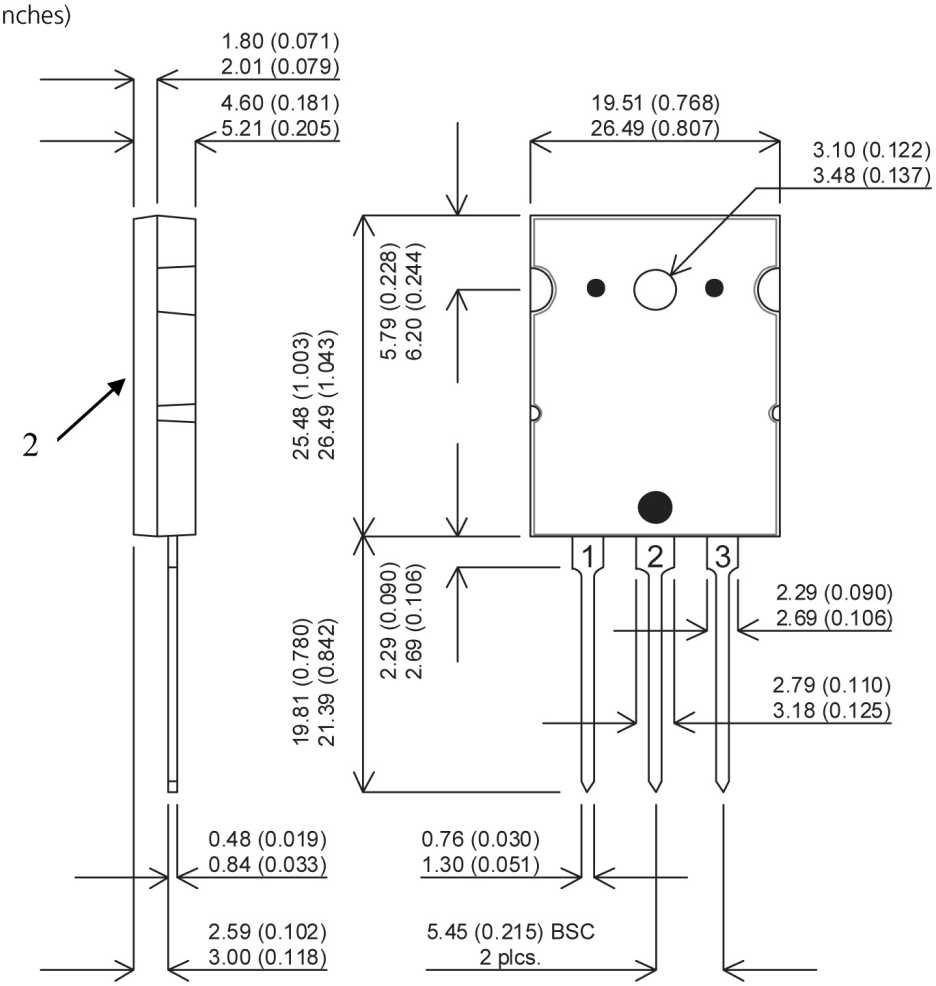
GENERAL CHARACTERISTICS CONTINUED (T_C = 25°C unless otherwise stated)





MECHANICAL DATA

Dimensions in mm (Inches)



Pin1 – Gate Pin2 – Source Pin3 - Drain

TO-264