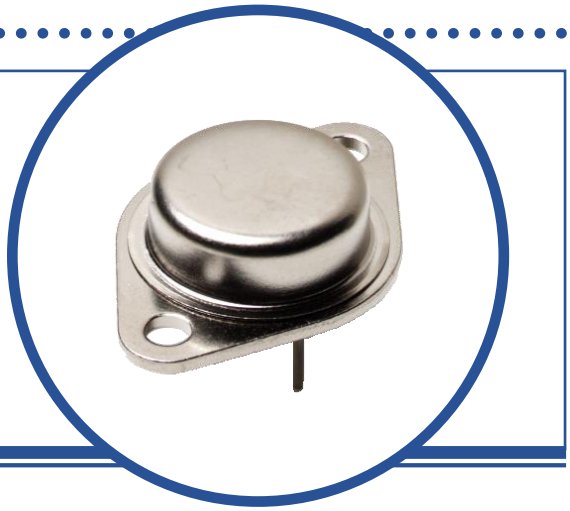
P-CHANNEL LATERAL POWER MOSFET FOR AUDIO

ALF08P16K/ALF08P20K



- Designed specifically for linear audio amplifier applications
- High-speed for high bandwidth amplifiers
- High voltage rating – 160V & 200V
- TO-3 metal package
- Enhanced oscillation suppression in multi-device applications
- Complimentary N-channel available – ALF08N16K/ALF08N20K

ABSOLUTE MAXIMUM RATINGS

(T_C = 25°C unless otherwise stated)			ALF08P16K	ALF08P20K
V_{DSS}	Drain – Source Voltage		-160V	-200V
V_{GSS}	Gate – Source Voltage		±20V	
I_D	Continuous Drain Current		-8A	
I_{DR}	Body Drain Diode Current		-8A	
P_D	Allowable Power Dissipation	T_{case} = 25°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	°C/W

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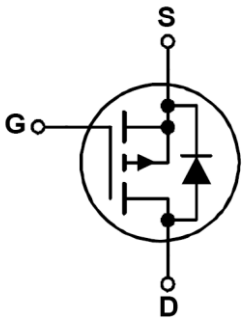
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
BV_{DSX}	Drain-Source Breakdown Voltage	V_{GS} = 10V I_D = -10mA	ALF08P16K	-160			V
			ALF08P20K	-200			
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	-0.15		-1.5	V
$V_{DS(sat)}$*	Drain-Source Saturation Voltage	V_{GD} = 0	I_D = -8A			-12	V
$\|y_{fs}\|$*	Forward Transfer Admittance	V_{DS} = -10V	I_{DS} = -3A	0.7		2	S(℧)
I_{DSX}	Drain-Source Cut-Off Current	V_{GS} = -10V	V_{DS} = -160V ALF08P16K			-10	mA
			V_{DS} = -200V ALF08P20K			-10	

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

DYNAMIC CHARACTERISTICS

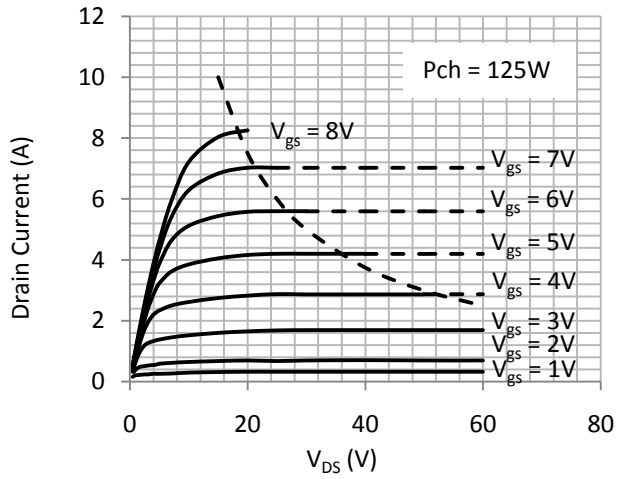
C_{iss}	Input Capacitance	V_{GS} = 0		700		pF
C_{oss}	Output Capacitance	V_{DS} = -10V		300		
C_{rss}	Reverse Transfer Capacitance	f = 1.0MHz		25		
t_{on}	Turn-On Time	V_{DS} = -20V		120		ns
t_{off}	Turn-Off Time	I_D = -5A		60		



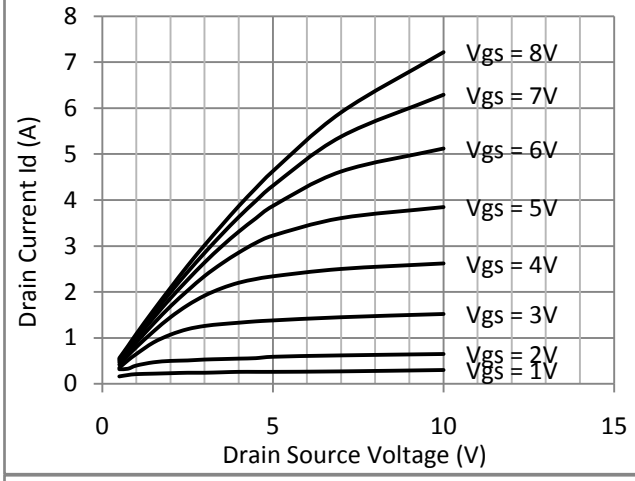
Please Note: These lateral mosfets do not include a G-S protection network and care must therefore be taken with static handling precautions and the appropriate protection in the amplifier circuit. Please refer to the application notes for more information.

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

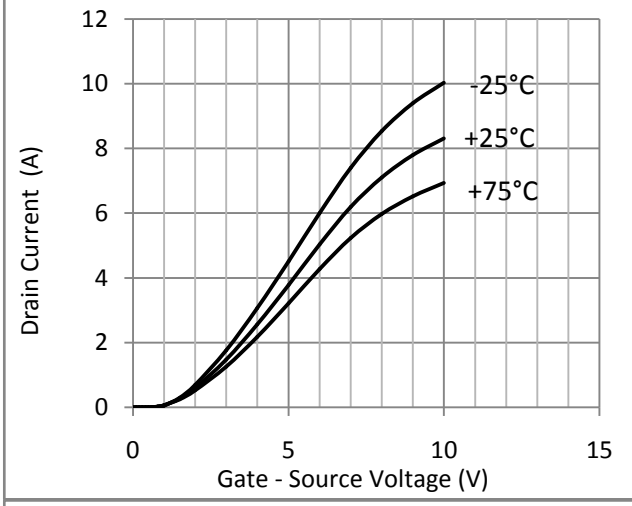
Typical Output Characteristics



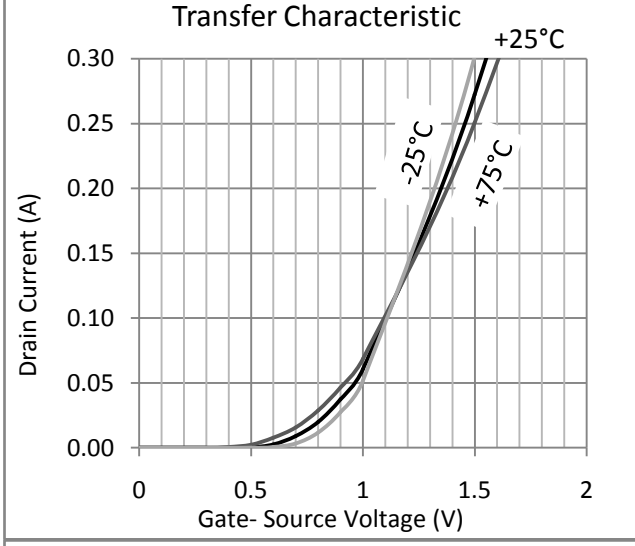
Typical Output Characteristics



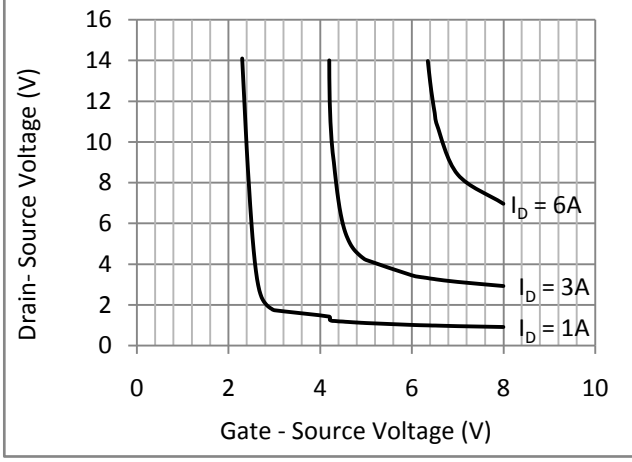
Transfer Characteristic



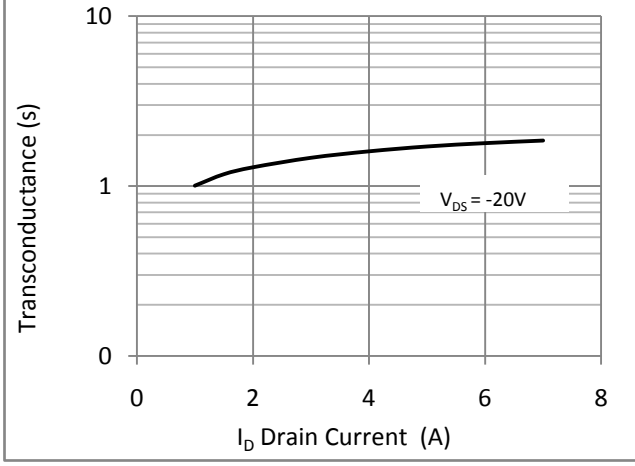
Transfer Characteristic



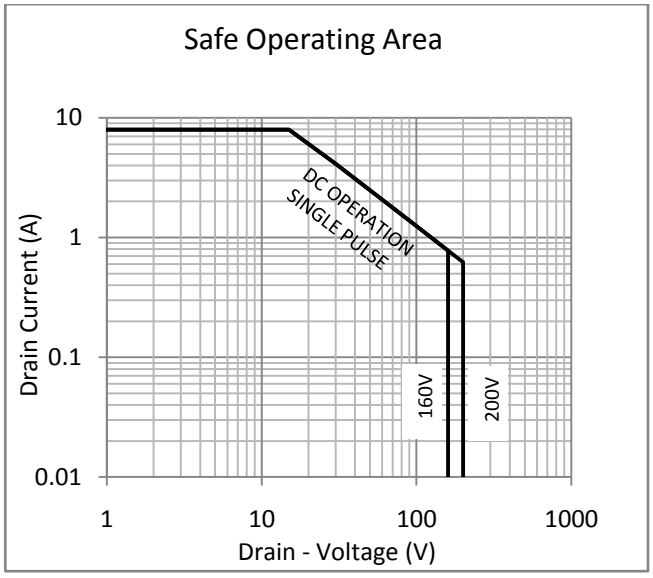
Drain - Source Voltage
vs Gate - Source Voltage

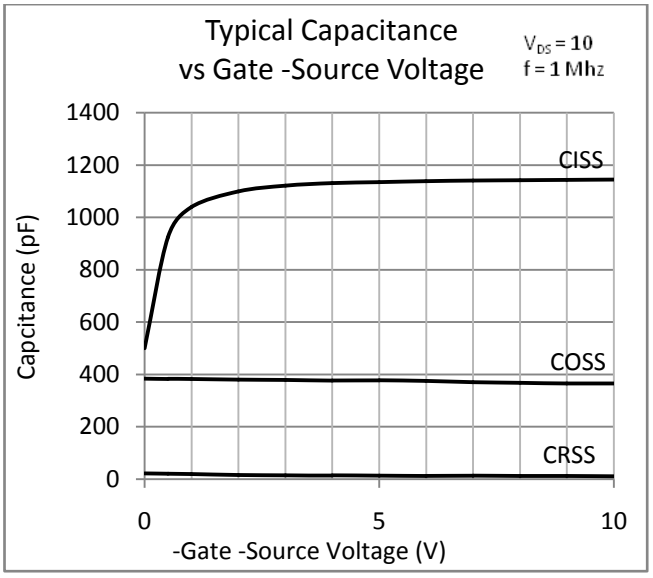


Transconductance



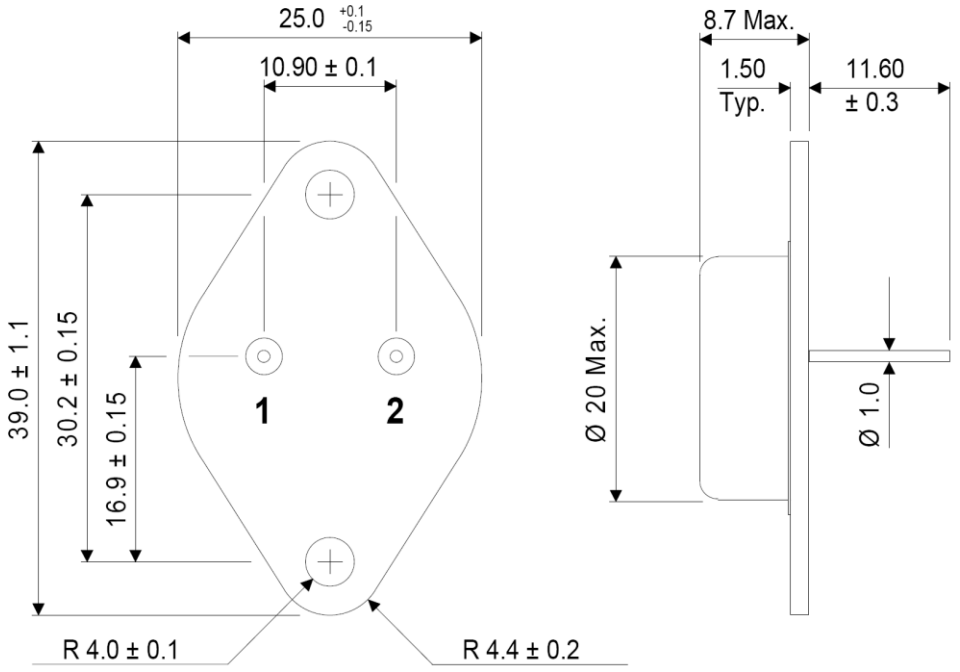
GENERAL CHARACTERISTICS CONTINUED (T_C = 25°C unless otherwise stated)





MECHANICAL DATA

Dimensions in mm



TO–3

Pin 1 – Gate Pin 2 – Drain Case – Source