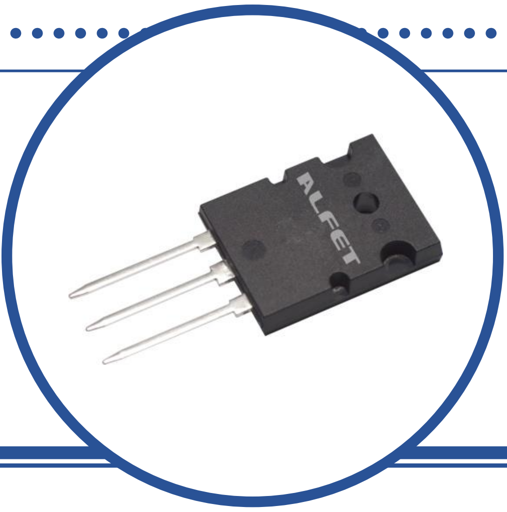
ALFET®

TT electronics
Semelab Limited

P-CHANNEL LATERAL POWER MOSFET FOR AUDIO

ALF16P16W/ALF16P20W

- 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 N-channel available – ALF16N16W/ALF16N20W



ABSOLUTE MAXIMUM RATINGS

(T_C = 25°C unless otherwise stated)

		ALF16P16W	ALF16P20W
V_{DSS}	Drain – Source Voltage	-160V	-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

SEMELAB
A subsidiary of
TT electronics plc.

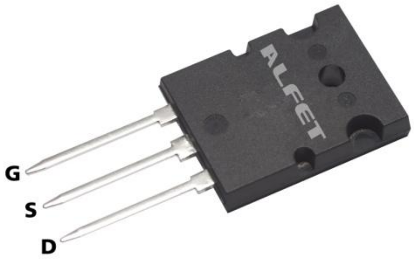
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

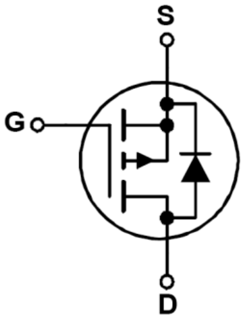
Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
BV_{DSX}	Drain-Source Breakdown Voltage	V_{GS} = 10V I_D = -10mA	ALF16P16W	-160			V
			ALF16P20W	-200			
I_{GSS}	Gate-Source Leakage Current	V_{DS} = 0	V_{GS} = ±20V			100	µA
$V_{GS(off)}$	Gate-Source Cut-off Voltage	V_{DS} = -10V	I_D = -100mA	-0.1		-1.5	V
$V_{DS(sat)}$*	Drain-Source Saturation Voltage	V_{GD} = 0	I_D = -16A			-12	V
$\lvert y_{fs} \rvert$*	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} = -160V ALF16P16W			-10	mA
			V_{DS} = -200V ALF16P20W			-10	

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

DYNAMIC CHARACTERISTICS

C_{iss}	Input Capacitance	V_{GS} = 0		1850		pF
C_{oss}	Output Capacitance	V_{DS} = -10V		850		
C_{rss}	Reverse Transfer Capacitance	f = 1.0MHz		55		
t_{on}	Turn-On Time	V_{DS} = -20V		150		ns
t_{off}	Turn-Off Time	I_D = -7A		105		



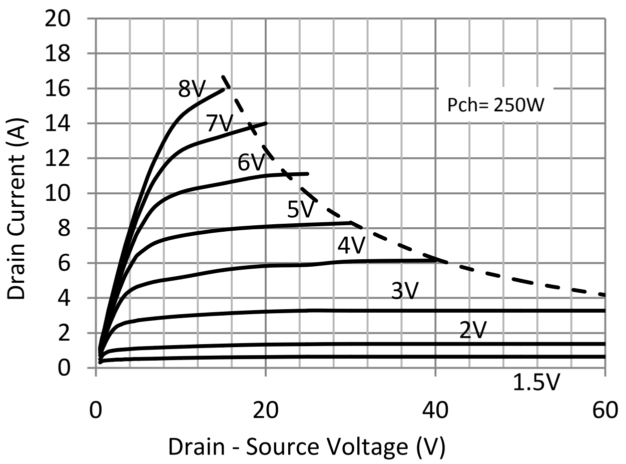


Please Note: These lateral mosfets do not include a G-S protection network and care must therefore be taken with static handling precautions and the appropriate protection in the amplifier circuit. Please refer to the application notes for more information.

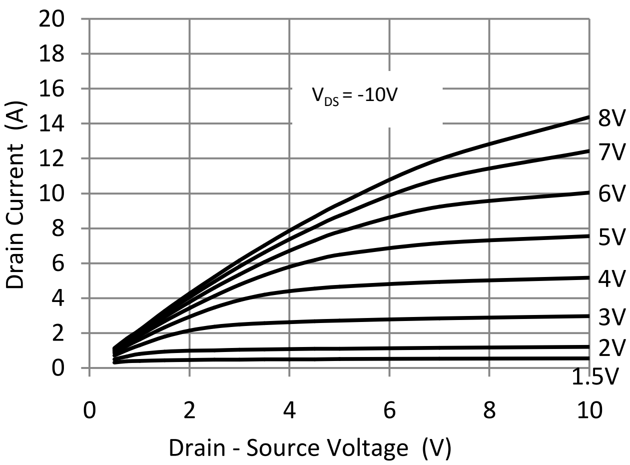
ALF16P16W
ALF16P20W

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

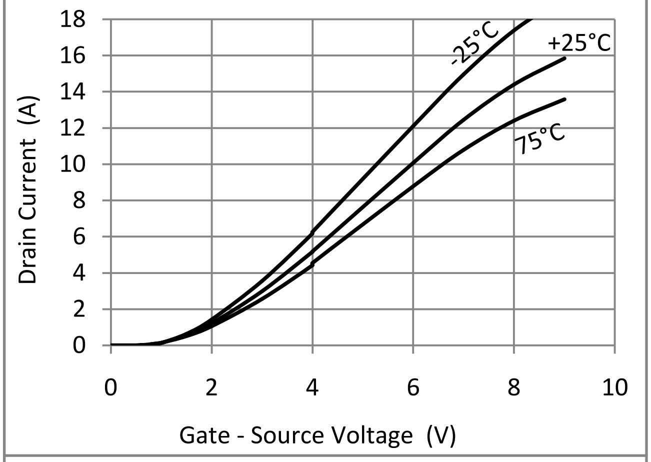
Typical Output Characteristics



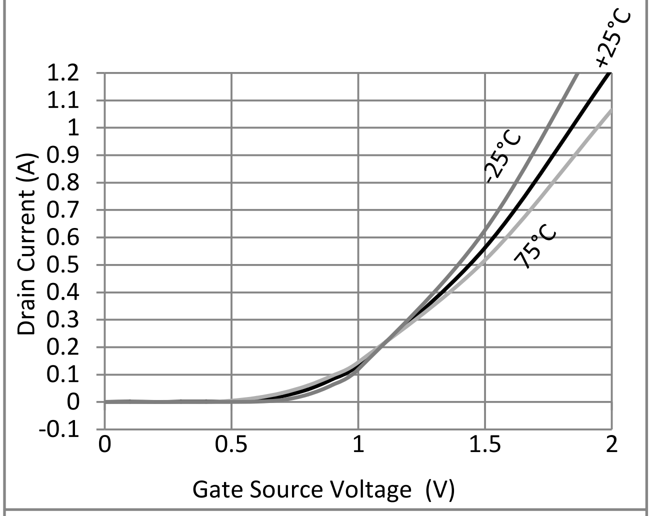
Typical Output Characteristics



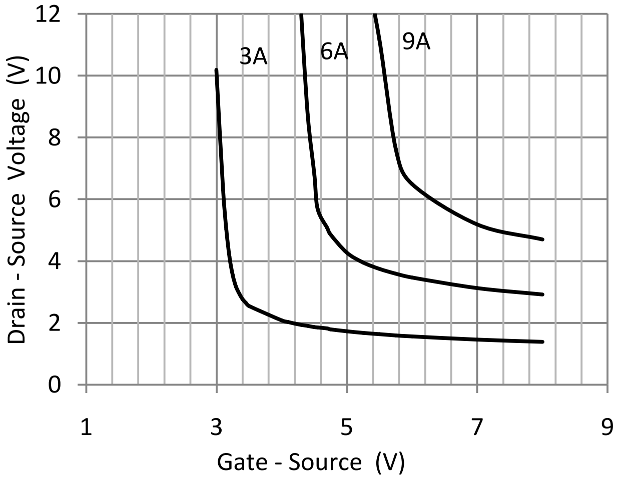
Transfer Characteristics



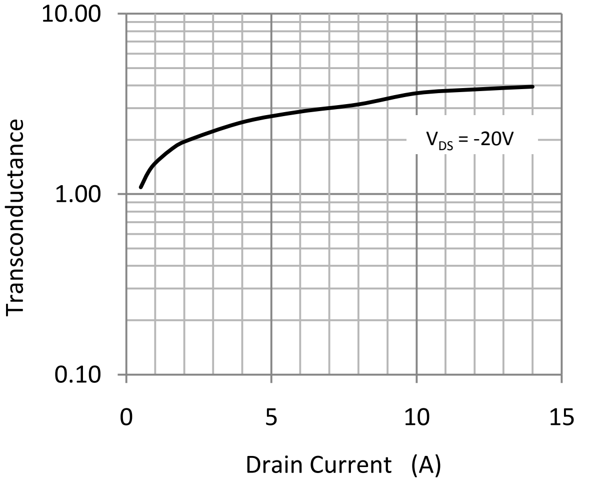
Transfer Characteristic



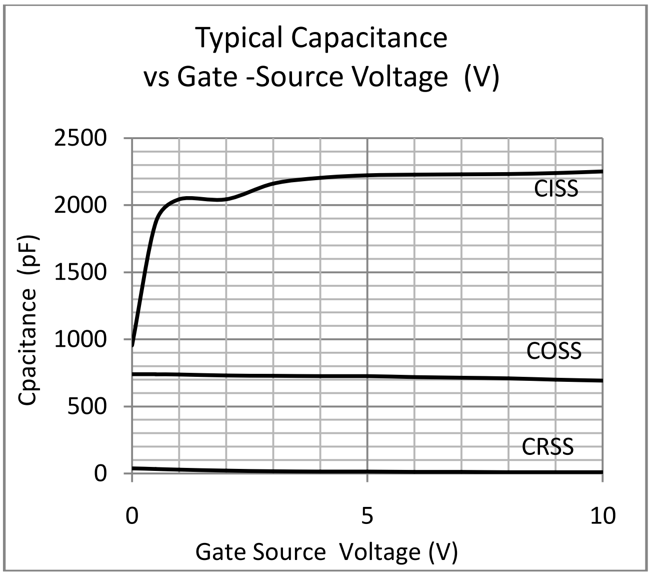
Drain -Source Voltage vs Gate-Source Voltage

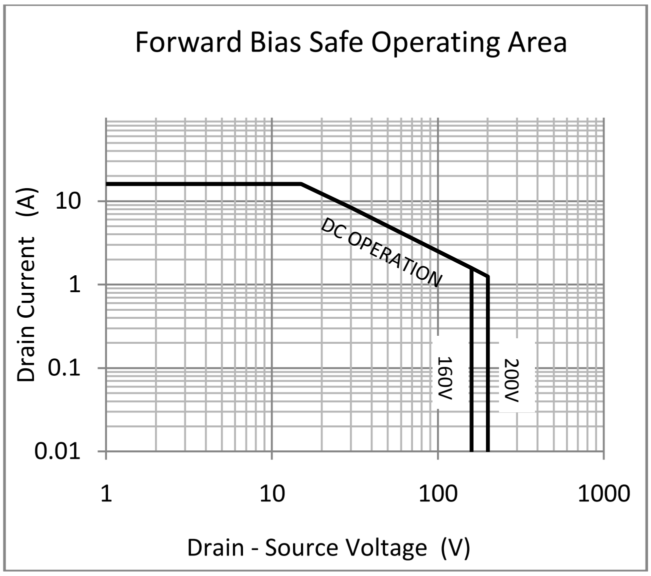


Transconductance



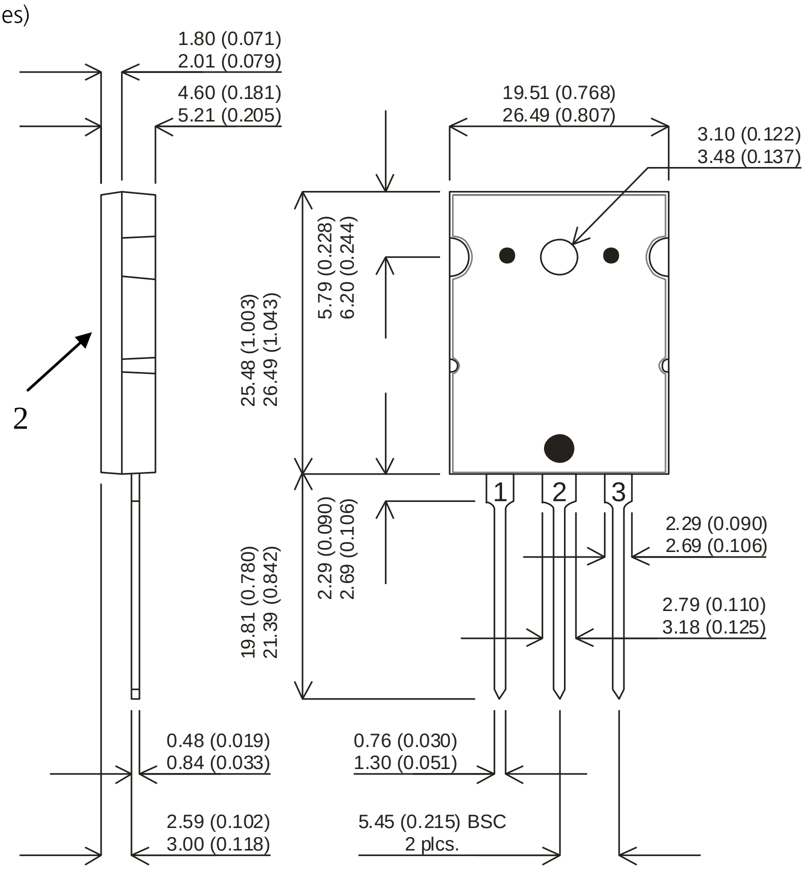
GENERAL CHARACTERISTICS CONTINUED (T_C = 25°C unless otherwise stated)





MECHANICAL DATA

Dimensions in mm (Inches)



Pin1 – Gate Pin2 – Source Pin3 - Drain

TO-264