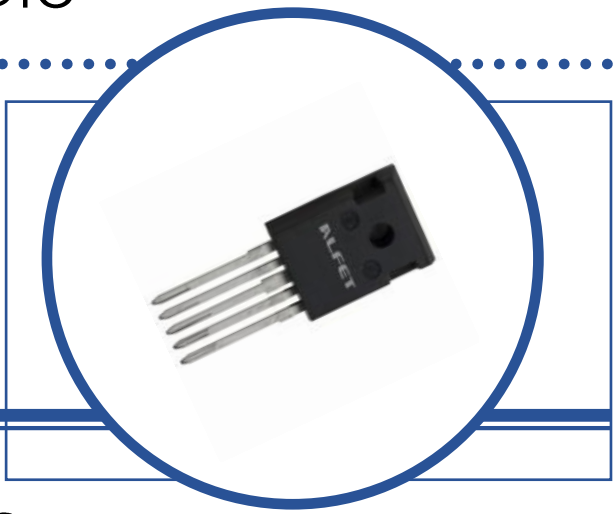
N & P CHANNEL LATERAL POWER MOSFET FOR AUDIO

TT electronics
Semelab Limited

ALF08NP16V5/ALF08NP20V5



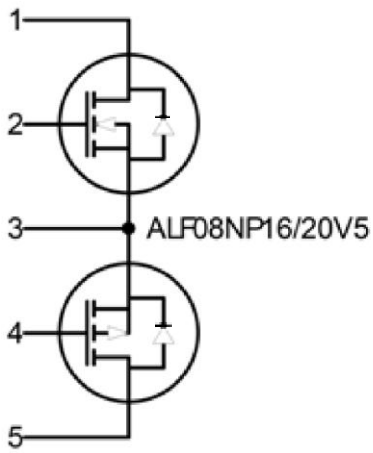
- Complimentary N & P Channel devices in a single package
- Designed specifically for linear audio amplifier applications
- High-speed for high bandwidth amplifiers
- High voltage rating – 160V & 200V
- 5 pinTO-247 package

ABSOLUTE MAXIMUM RATINGS

(T_C = 25°C unless otherwise stated)			ALF08NP16V5	ALF08NP20V5
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	TBC	
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			TBC	°C/W



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ALF08NP16V5
ALF08NP20V5

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

(N-channel values stated, values negative for P-Channel)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
BV_{DSX}	Drain-Source Breakdown Voltage	V_{GS} = -10V I_D = 10mA	ALF08NP16V	160			V
			ALF08NP20V	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 ALF08NP16V			10	mA
			V_{DS} = 200V ALF08NP20V			10	

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

DYNAMIC CHARACTERISTICS

Symbols	Parameters	Test Conditions	N-Ch Typ.	P-Ch Typ.	Units
C_{iss}	Input Capacitance	V_{GS} = 0	500	700	pF
C_{oss}	Output Capacitance	V_{DS} = 10V	300	300	
C_{rss}	Reverse Transfer Capacitance	f = 1.0MHz	10	25	
t_{on}	Turn-On Time	V_{DS} = 20V	100	120	ns
t_{off}	Turn-Off Time	I_D = 5A	50	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.

ALF08NP16V5
ALF08NP20V5

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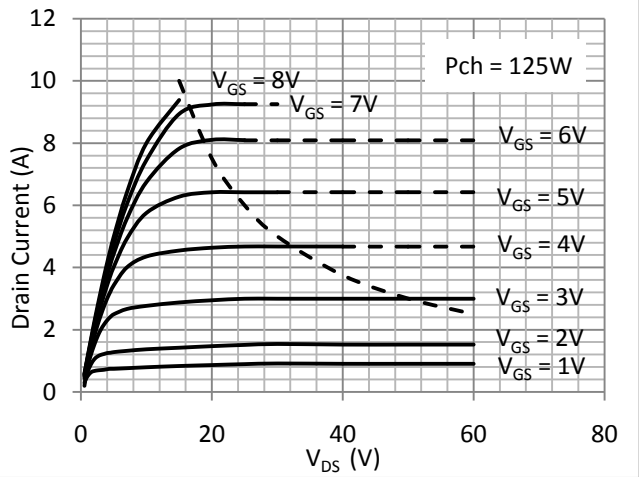
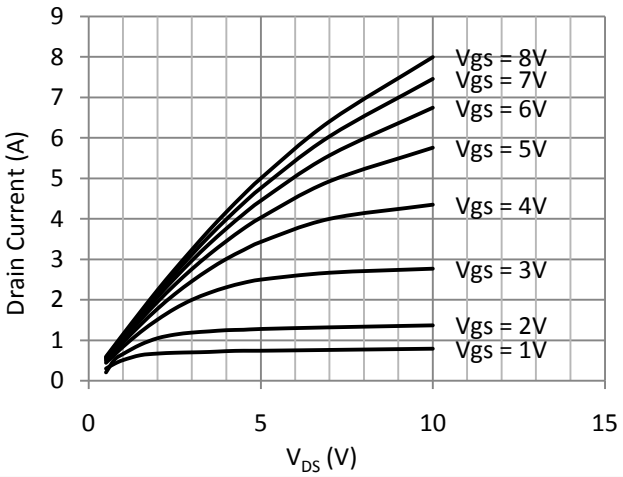
N-CHANNEL GENERAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

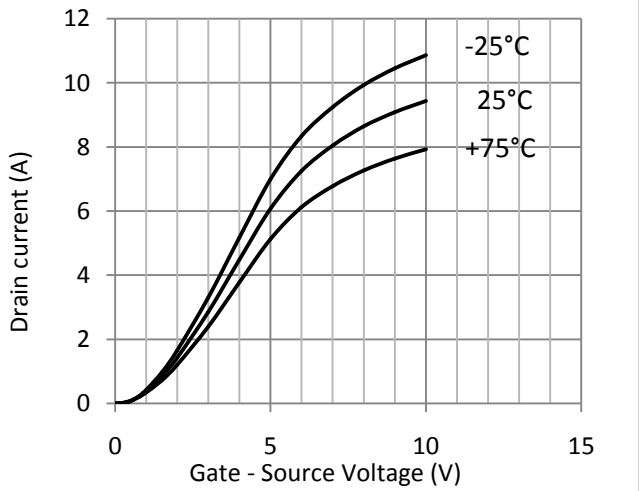
Typical Output Characteristics



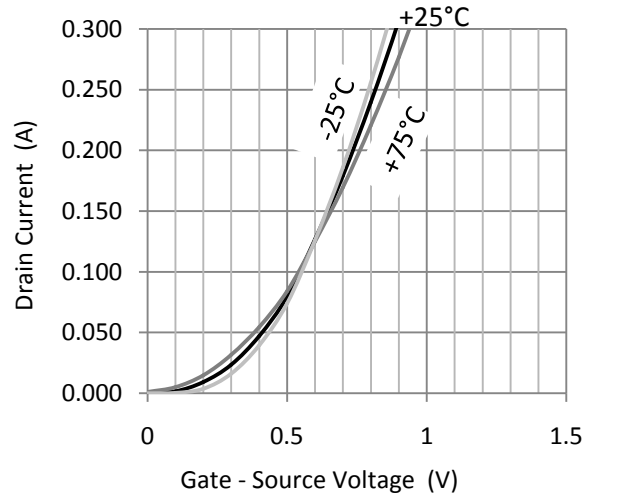
Typical Output Characteristics



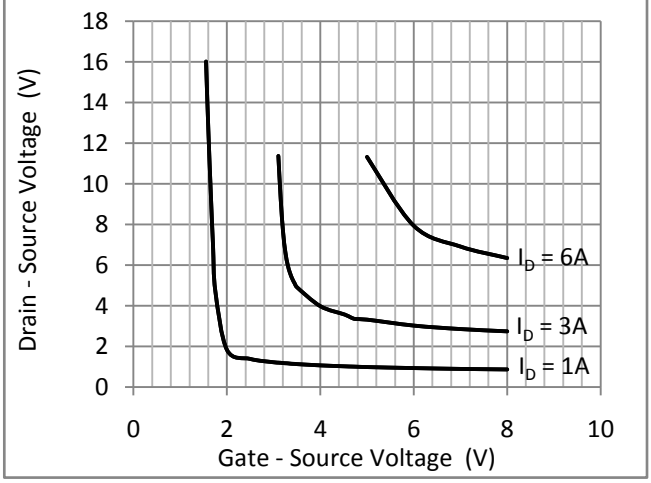
Transfer Characteristic



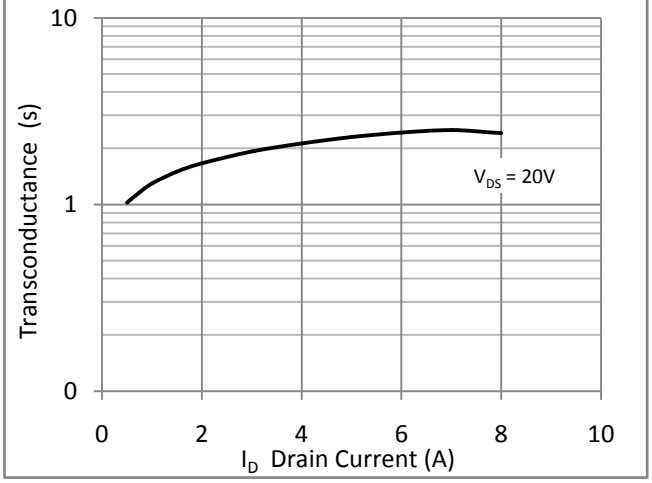
Transfer Characteristic



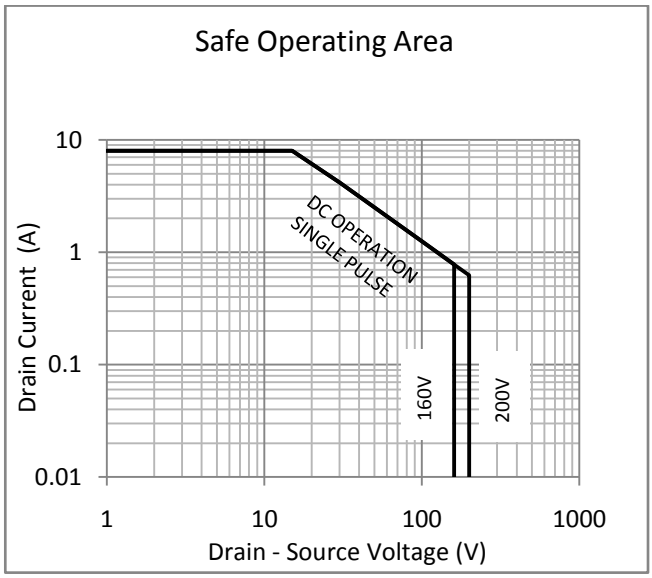
Drain - Source Voltage
vs Gate - Source Voltage

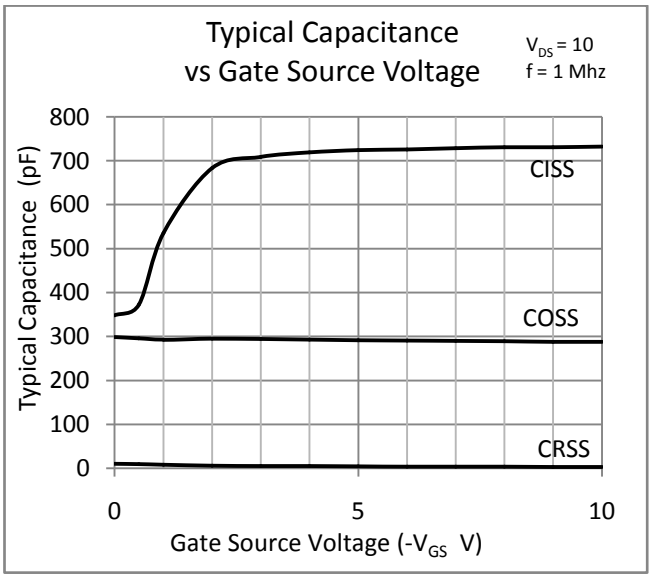


Transconductance



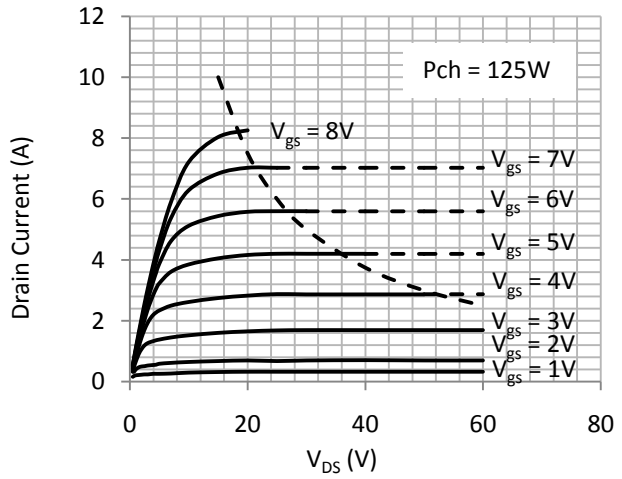
N-CHANNEL GENERAL CHARACTERISTICS CONTINUED



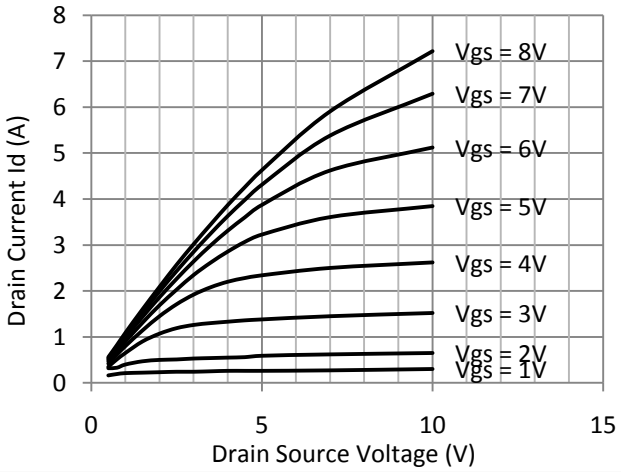


P-CHANNEL GENERAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

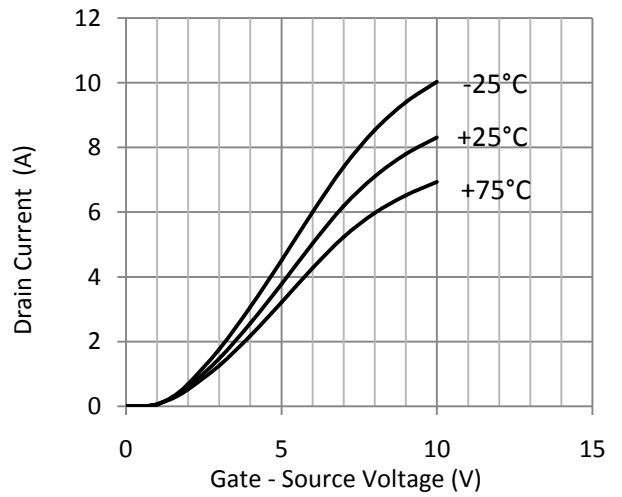
Typical Output Characteristics



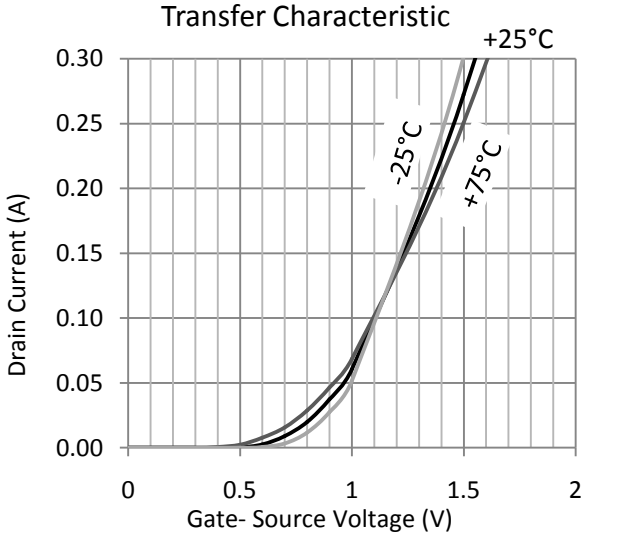
Typical Output Characteristics



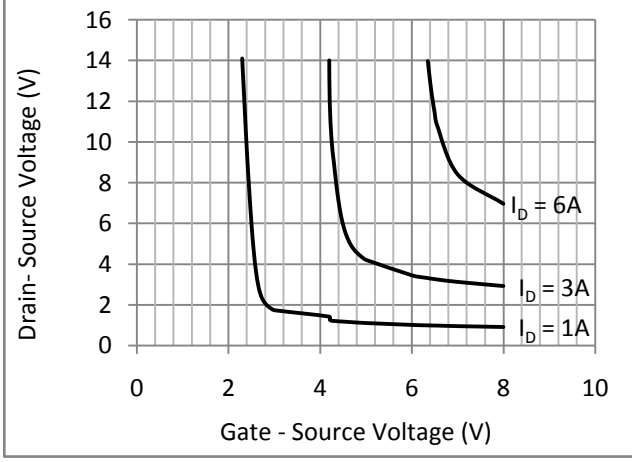
Transfer Characteristic



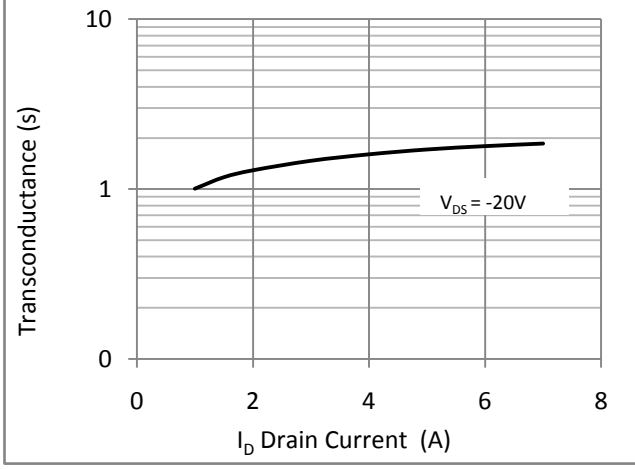
Transfer Characteristic



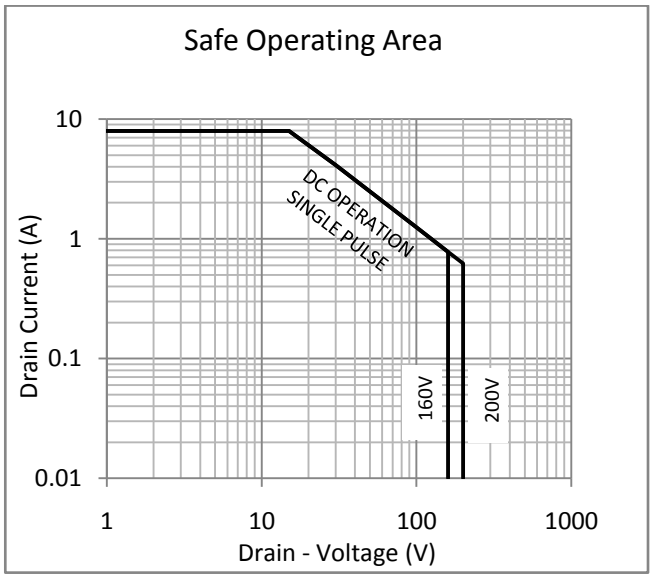
Drain - Source Voltage
vs Gate - Source Voltage

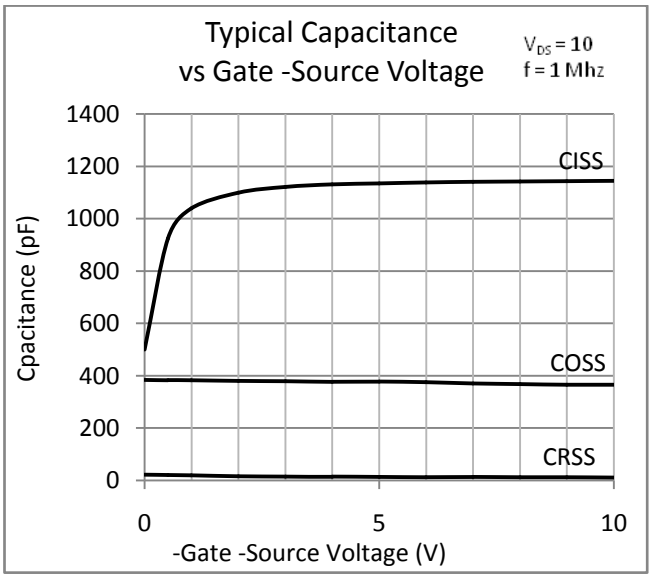


Transconductance



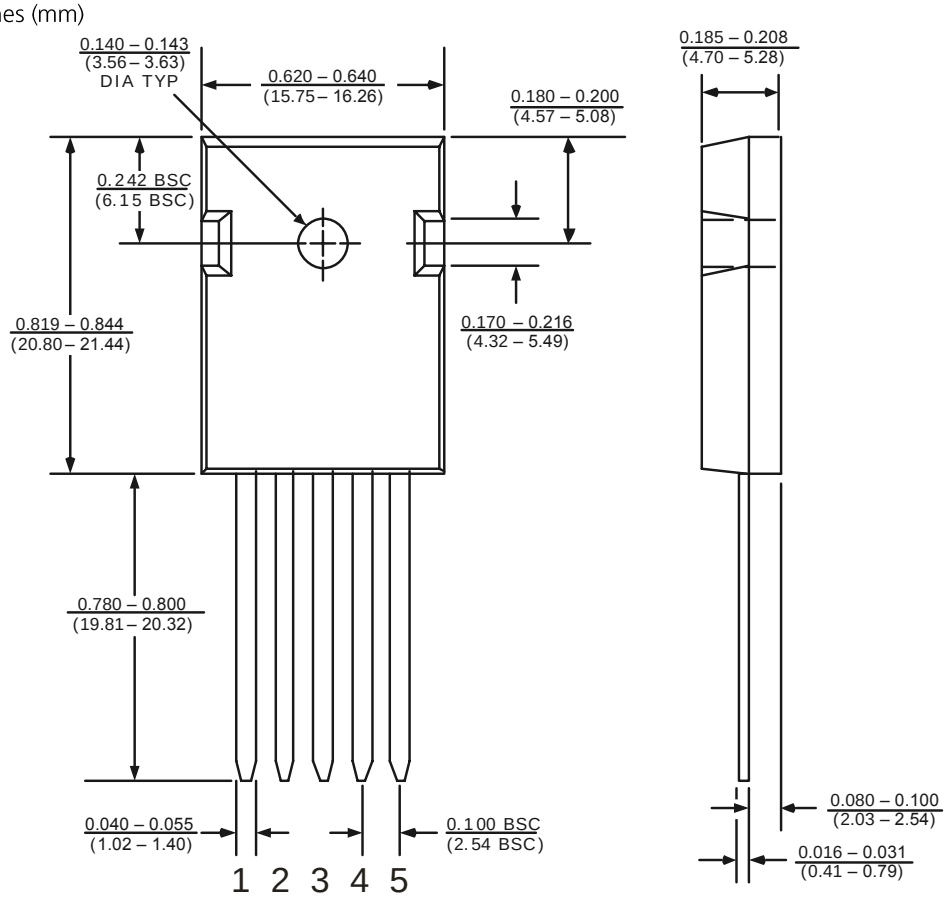
P-CHANNEL GENERAL CHARACTERISTICS CONTINUED





MECHANICAL DATA

Dimensions in Inches (mm)



TO-247-5L

Pin1 – N-Ch Drain **Pin2 – N-Ch Gate** **Pin3 – Source(common)**
Pin4 – P-Ch Gate **Pin5 – P-Ch Drain**

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