



# ACD102PSD P-CHANNEL POWER MOSFET

## DESCRIPTION

The ACD102PSD is an enhancement mode, P-channel lateral MOSFET specifically designed for professional audio applications.




## FEATURES

- ADVANCED AUDIO CONTROL
- SEMEFAB/CLASS-D CUSTOM DESIGN
- HIGH VOLTAGE (200V)
- HIGH ENERGY RATING (125W)
- ENHANCEMENT MODE
- OSCILLATION PROTECTED
- N-CHANNEL COMPLEMENT (ACD100NSD) ALSO AVAILABLE

## 1.0 ABSOLUTE MAXIMUM RATINGS

(T<sub>case</sub> = 25°C unless otherwise stated)

PARAMETER		RATING	UNITS
V <sub>DSX</sub>	Drain – Source Voltage	-200	V
V <sub>GSS</sub>	Gate – Source Voltage	±18	V
I <sub>D</sub>	Continuous Drain Current	-8	A
I <sub>D(PK)</sub>	Body – Drain Diode Reverse Drain Current	-8	A
P <sub>D</sub>	Total Power Dissipation	125	W
T <sub>stg</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>j</sub>	Maximum Operating Junction Temperature	+150	°C

	<p><b>ACD102PSD</b></p> <p><b>P-CHANNEL POWER MOSFET</b></p>
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## 2.0 ELECTRICAL CHARACTERISTICS - STATIC

(Tcase = 25°C unless otherwise stated)

Characteristic		Test Conditions	Min	Typ	Max	Units
BV <sub>DSX</sub>	Drain - Source Breakdown Voltage	V <sub>GS</sub> = 10V I <sub>D</sub> = -10mA	-200	-220		V
BV <sub>GSS</sub>	Gate - Source Breakdown Voltage	I <sub>GSS</sub> = -100μA	-18		18	V
V <sub>GS(OFF)</sub>	Gate - Source Cut-Off Voltage	V <sub>DS</sub> = -10V I <sub>D</sub> = -100mA	-0.15		-1.5	V
V <sub>DS(SAT)</sub> *	Drain - Source Saturation Voltage	V <sub>GD</sub> = 0 I <sub>D</sub> = -8A			-12	V
I <sub>DSX</sub>	Drain - Source Cut-Off Current	V <sub>GS</sub> = 10V V <sub>DS</sub> = -200V			-10	mA
yfs*	Forward Transfer Admittance	V <sub>DS</sub> = -10V I <sub>D</sub> = -3A	0.7		2	S

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

## 3.0 ELECTRICAL CHARACTERISTICS - DYNAMIC

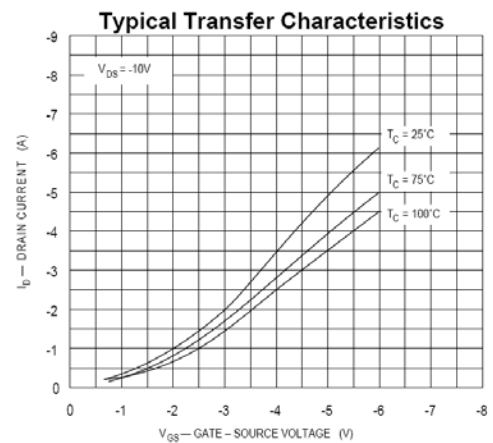
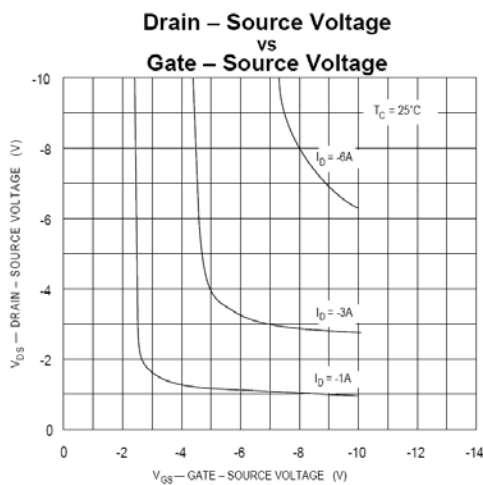
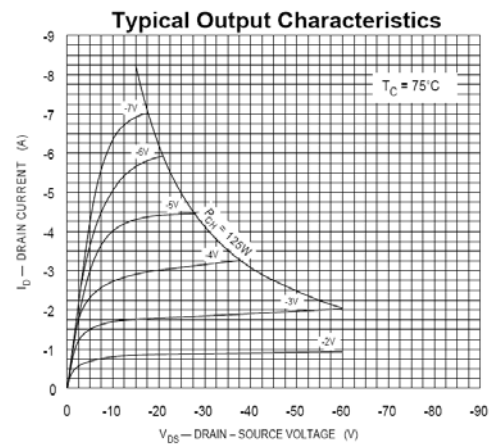
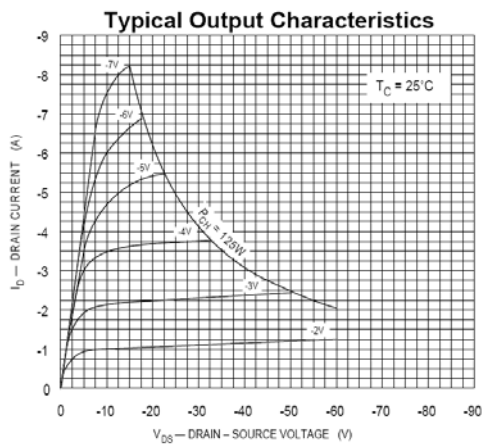
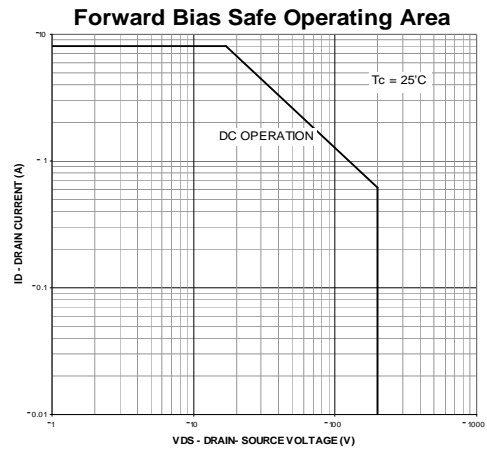
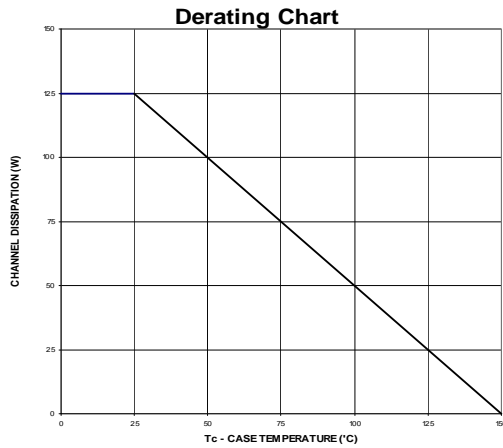
(Tcase = 25°C unless otherwise stated)

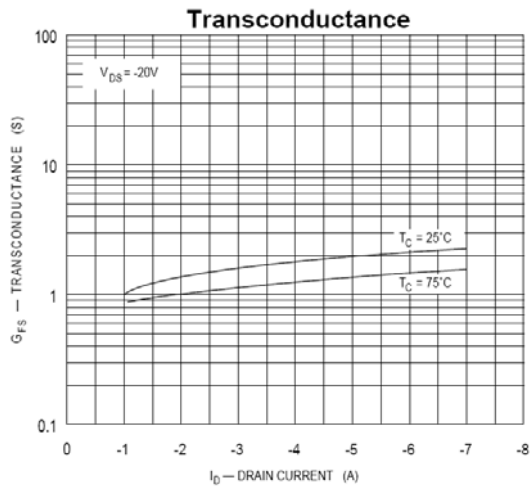
Characteristic		Test Conditions	Min	Typ	Max	Units
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> = -10V f = 1MHz		734		pF
C <sub>oss</sub>	Output Capacitance			300		
C <sub>rss</sub>	Reverse Transfer Capacitance			26		
t <sub>on</sub>	Turn-on Time	V <sub>DS</sub> = -20V I <sub>D</sub> = -5A		120		ns
t <sub>off</sub>	Turn-off Time			60		



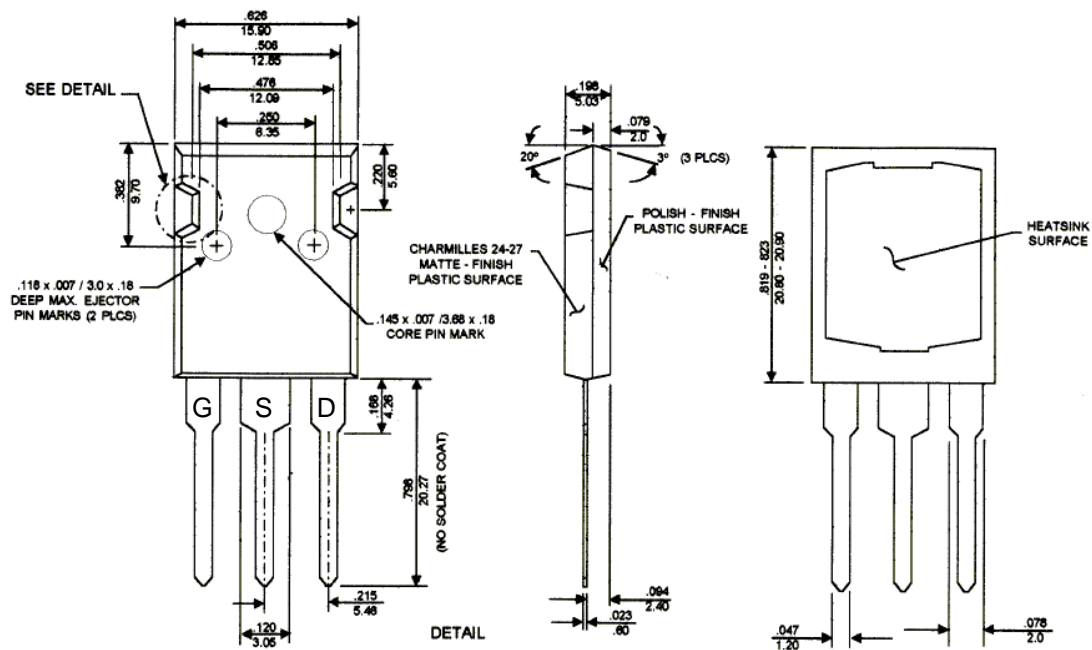
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## 4.0 TYPICAL CHARACTERISTICS





## 5.0 MECHANICAL DATA





ACD102PSD

## P-CHANNEL POWER MOSFET

Preliminary datasheets contain specifications based on conservative analysis and are current on publication date. Further evaluation will be carried to assess the products' maximum ratings, which may be higher than the conservative values shown in this preliminary specification.

Semefab (Scotland) Ltd. may change this specification at any time without notification.

Supply of products conforms to Semefab (Scotland) Ltd.'s Terms and Conditions.

### **LIFE SUPPORT APPLICATIONS**

This product is not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury.

Semefab (Scotland) Ltd. customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Semefab (Scotland) Ltd. for any damages resulting from such improper use or sale.

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