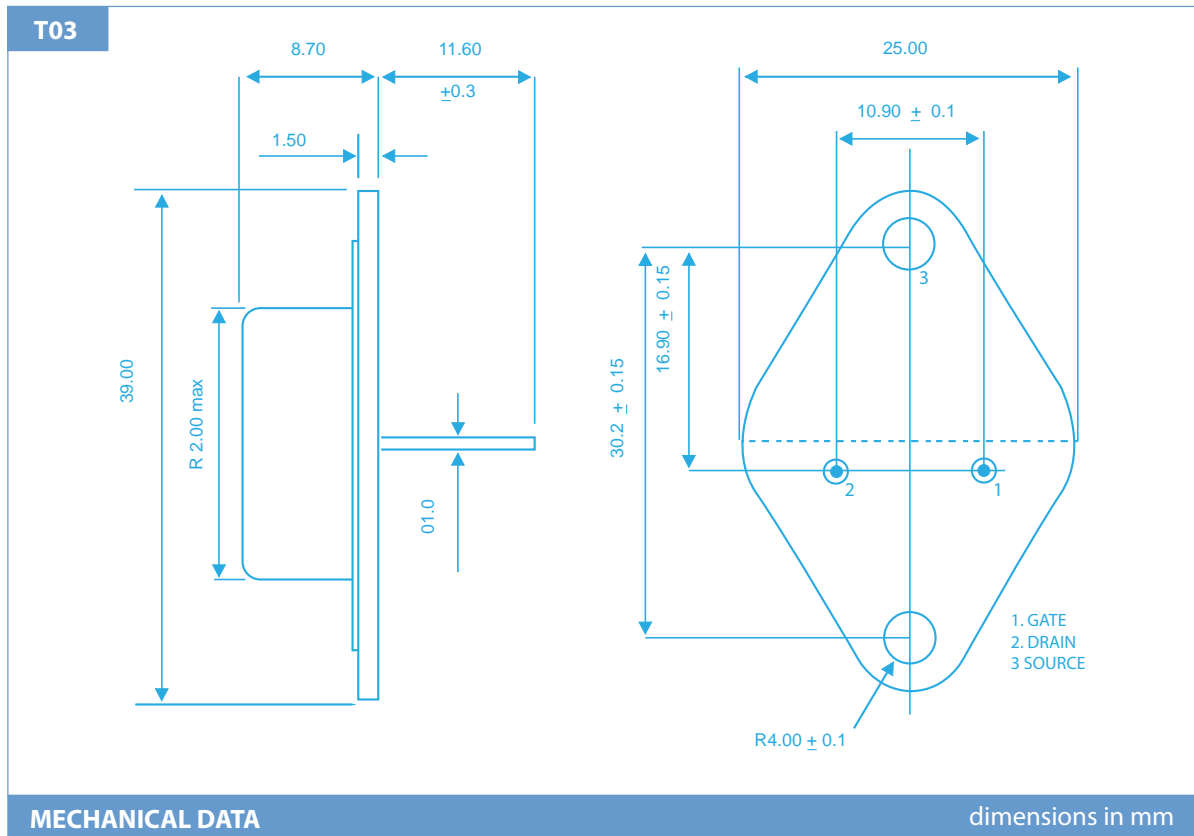


## HIGH POWER 125W HIGH QUALITY AUDIO AMPLIFIER APPLICATIONS

### N CHANNEL LATERAL MOSFET



#### ABSOLUTE MAXIMUM RATINGS

( $T_C = 25^\circ\text{C}$  unless otherwise stated)

ECF10N20

$V_{DSX}$	Drain – Source Voltage	200V
$V_{GSS}$	Gate – Source Voltage	±14V
$I_D$	Continuous Drain Current	8A
$I_{D(PK)}$	Body Drain Diode	8A
$P_D$	Total Power Dissipation @ ( $T_{case} = 25^\circ\text{C}$ )	125W
$T_{stg}$	Storage Temperature Range	-55 to 150°C
$T_j$	Maximum Operating Junction Temperature	150°C
$R\theta_{JC}$	Thermal Resistance Junction - case	1.0°C/W

Exicon products are available at [www.profusionplc.com](http://www.profusionplc.com)

## STATIC CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)

Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
$BV_{DSX}$	Drain – Source Breakdown Voltage $I_D = 10\text{mA}$	ECF10N20	200		V
$BV_{GSS}$	Gate – Source Breakdown Voltage $V_{DS} = 0$	$I_G = \pm 100\mu\text{A}$	$\pm 14$		V
$V_{GS(OFF)}$	Gate - Source Cut-Off Voltage $V_{DS} = 10\text{V}$	$I_D = 100\text{mA}$	0.15	1.5	V
$V_{DS(SAT)}^*$	Drain - Source Saturation Voltage $V_{GD} = 0$	$I_D = 8\text{A}$		12	V
$I_{DSX}$	Drain - Source Cut - Off Current $V_{GS} = -10\text{V}$	$V_{DS} = 200\text{V}$		10	mA
$Y_{fs}^*$	Forward Transfer Admittance $V_{DS} = 10\text{V}$	$I_D = 3\text{A}$	0.7	2	S

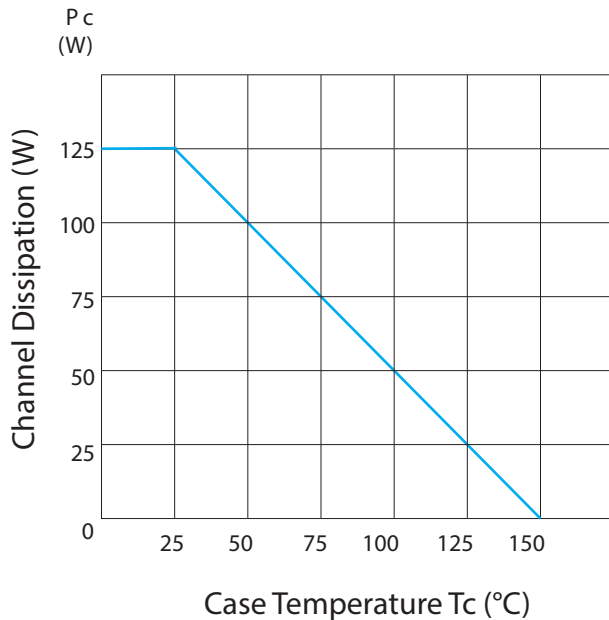
## DYNAMIC CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)

Characteristic	Test Conditions	N-Channel	P-Channel	UNIT
$C_{iss}$	Input Capacitance	500	700	
$C_{oss}$	Output Capacitance $V_{DS} = 10\text{V}$ $f = 1\text{MHz}$	300	300	pF
$C_{rss}$	Reverse Transfer Capacitance	10	25	
$t_{on}$	Turn-on Time $V_{DS} = 20\text{V}$	100	120	ns
$t_{off}$	Turn-off Time $I_D = 7\text{A}$	50	60	

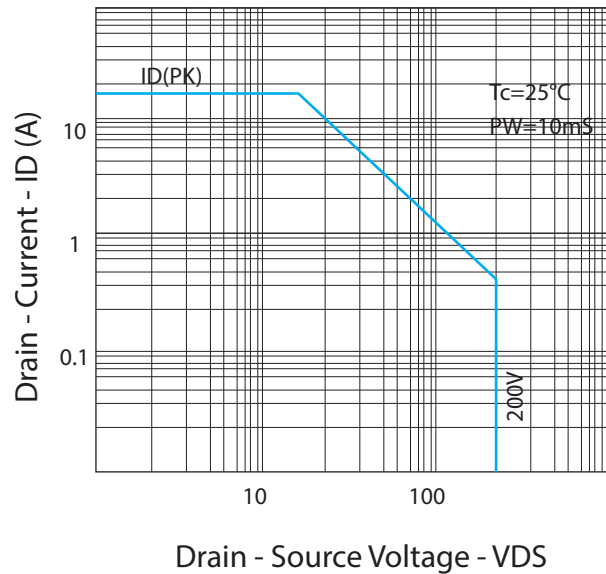
\* Pulse Test: Pulse Width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Characteristics for 125W devices

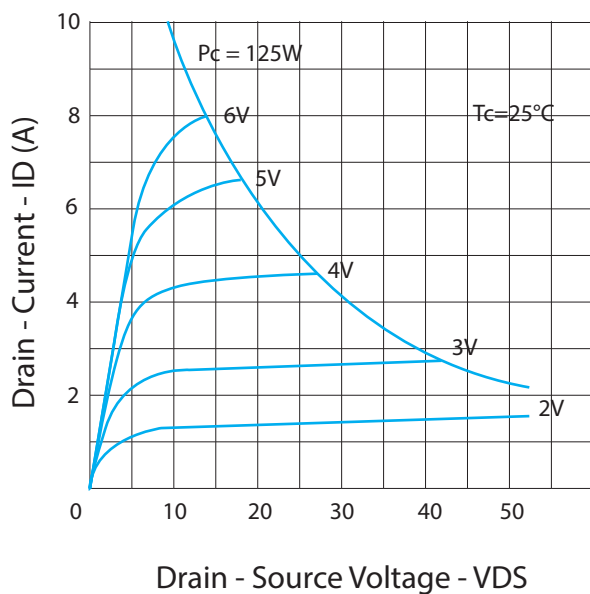
### Power vs. Temperature Derating



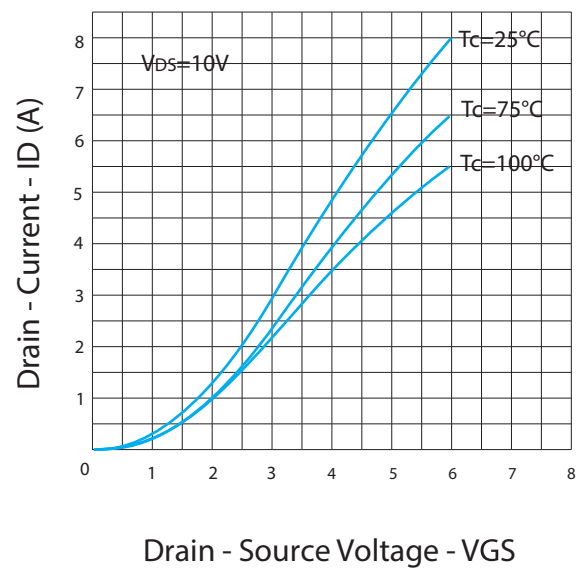
### Maximum Safe Operating Area



### Typical Output (N-Channel)



### Typical Transfer Characteristics (N-Channel)



## Typical Characteristics for 125W devices (cont.)

### Forward Transfer Admittance (N-Channel)

