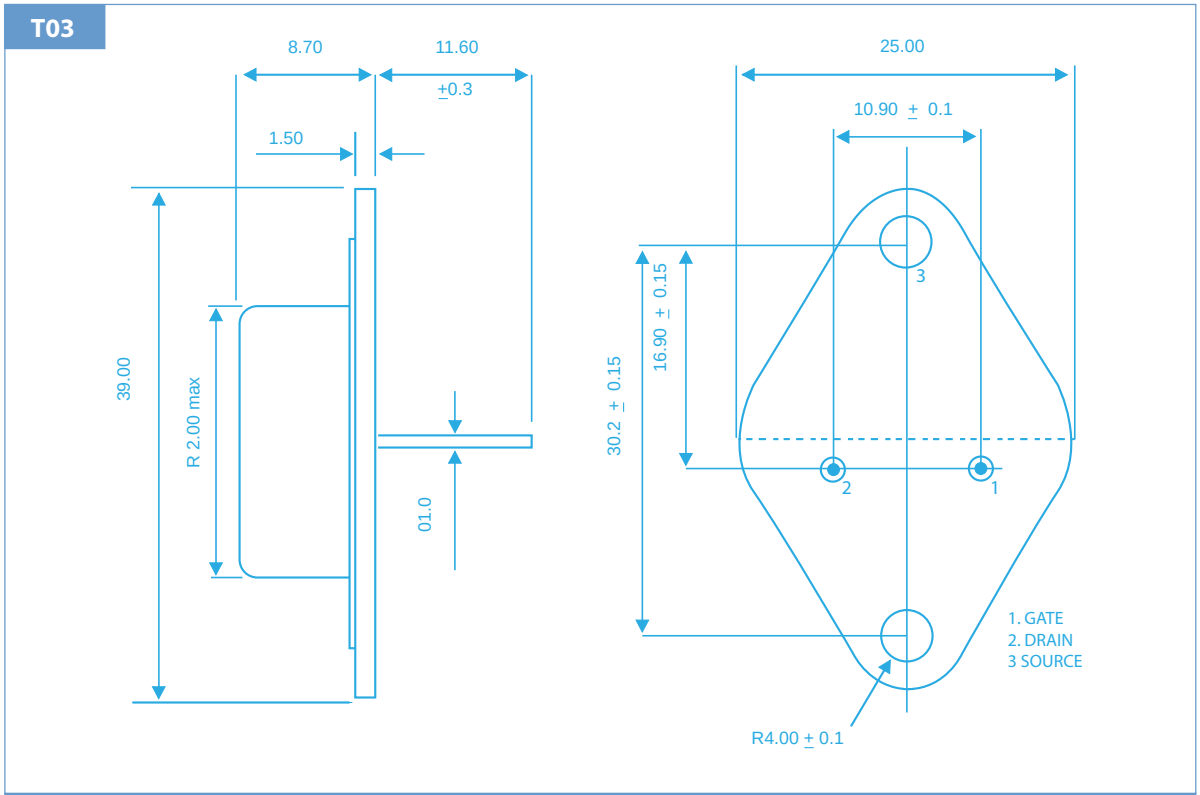
# HIGH POWER 125W
# HIGH QUALITY AUDIO AMPLIFIER APPLICATIONS

## N CHANNEL LATERAL MOSFET

**T03**




**MECHANICAL DATA** dimensions in mm

| ABSOLUTE MAXIMUM RATINGS ($T_C$= 25°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°C) | 125W |
| $T_{stg}$ | Storage Temperature Range | -55 to 150°C |
| $T_j$ | Maximum Operating Junction Temperature | 150°C |
| RθJC | Thermal Resistance Junction - case | 1.0°C/W |

## STATIC CHARACTERISTICS ($T_C$= 25°C unless otherwise stated)

| Characteristic | | Test Conditions | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $BV_{DSX}$ | Drain – Source Breakdown Voltage | ID = 10mA | ECF10N20 | | 200 | | V |
| $BV_{GSS}$ | Gate – Source Breakdown Voltage | VDS = 0 | IG=±100uA | ±14 | | | V |
| $V_{GS(OFF)}$ | Gate - Source Cut-Off Voltage | VDS = 10V | ID = 100mA | 0.15 | | 1.5 | V |
| $V_{DS(SAT)}$* | Drain - Source Saturation Voltage | VGD = 0 | ID = 8A | | | 12 | V |
| $I_{DSX}$ | Drain - Source Cut - Off Current | VGS = -10V | VDS =200V | | | 10 | mA |
| Yfs* | Forward Transfer Admittance | VDS = 10V | ID = 3A | 0.7 | | 2 | S |

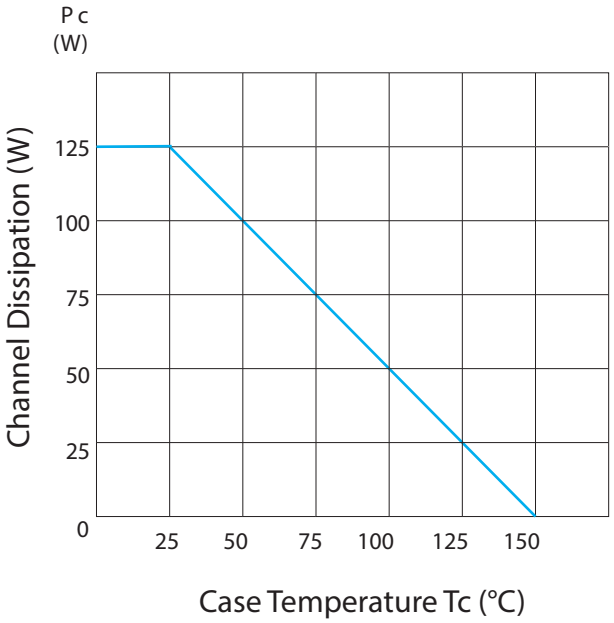
## DYNAMIC CHARACTERISTICS ($T_C$= 25°C unless otherwise stated)

| Characteristic | | Test Conditions | N-Channel | P-Channel | UNIT |
|---|---|---|---|---|---|
| Ciss | Input Capacitance | VDS= 10V f = 1MHz | 500 | 700 | pF |
| Coss | Output Capacitance | | 300 | 300 | |
| Crss | Reverse Transfer Capacitance | | 10 | 25 | |
| $t_{on}$ | Turn-on Time | VDS= 20V ID = 7A | 100 | 120 | ns |
| $t_{off}$ | Turn-off Time | | 50 | 60 | |

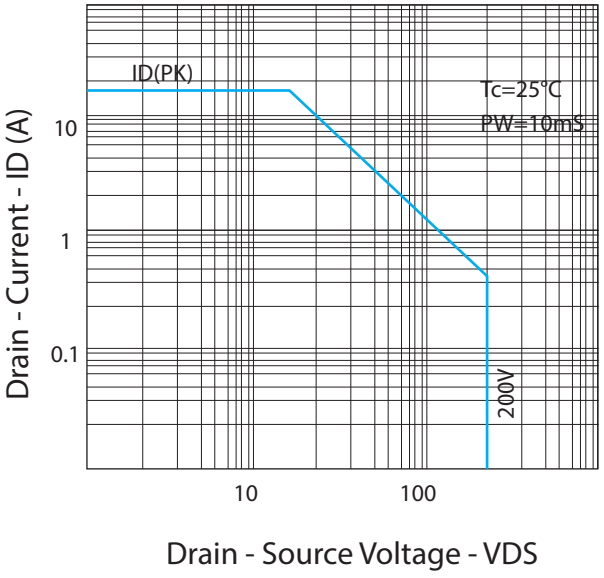
* Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2%

## Typical Characteristics for 125W devices

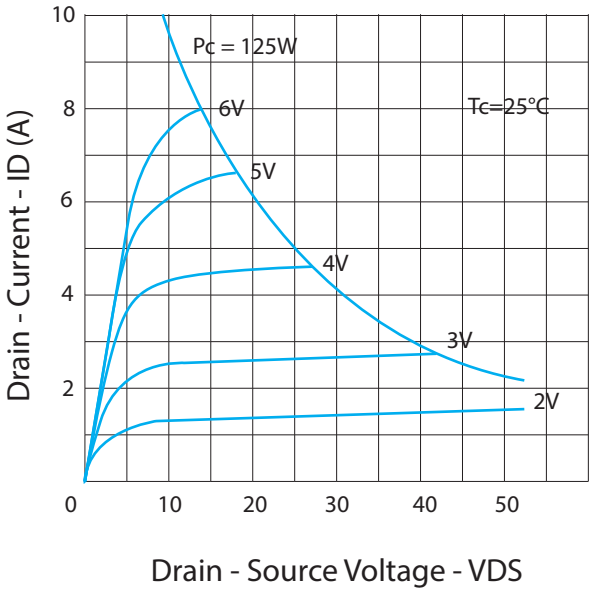
### Power vs. Temperature Derating



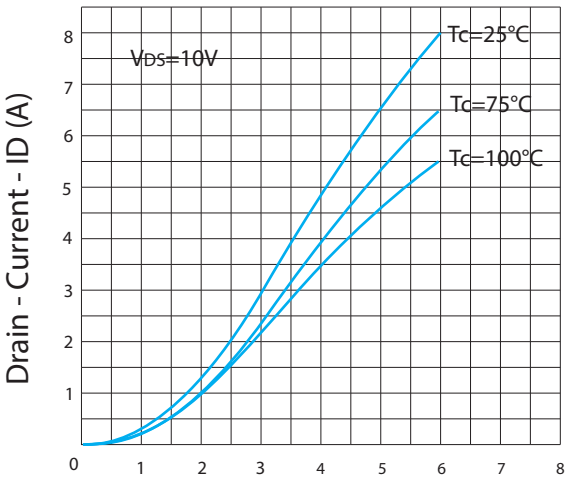

### Maximum Safe Operating Area




### Typical Output (N-Channel)




### Typical Transfer Characteristics (N-Channel)



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

### Forward Transfer Admittance (N-Channel)