



### DESCRIPTION

The AM15N25 is available in TO220F Package

BVDSS	RDS(ON)	ID
250V	180mΩ	12.5A

- Power Management in Note book
- DC/DC Converter
- Load Switch
- LCD Display inverter

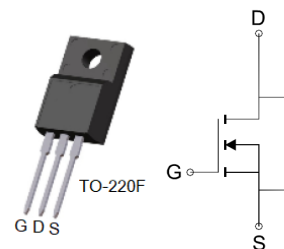
### ORDERING INFORMATION

Package Type	Part Number	
TO220F SPQ: 50pcs/ Tube	T3F	AM15N25T3FU
		AM15N25T3FVU
Note	V: Halogen free Package U: Tube Package	
AiT provides all RoHS products		

### FEATURE

- RDS(ON)=180mΩ@VGS=10V
- Super high density cell design for extremely low RDS(ON)
- Exceptional on-resistance and maximum DC current capability

### PIN DESCRIPTION



Pin#	Symbol	Function
1	G	Gate
2	D	Drain
3	S	Source

### ABSOLUTE MAXIMUM RATINGS

T<sub>A</sub> = 25°C, unless otherwise specified.

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	V <sub>DS</sub>	250	V
Gate-Source Voltage	V <sub>GS</sub>	±25	V
Continuous Drain Current	I <sub>D</sub>	T <sub>C</sub> =25°C	12.5
		T <sub>C</sub> =70°C	10.4
Pulsed Drain Current	I <sub>DM</sub>	50	A
Maximum Power Dissipation	P <sub>D</sub>	T <sub>C</sub> =25°C	61.9
		T <sub>C</sub> =70°C	43.3
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 175	°C
Thermal Resistance-Junction to Case *	R <sub>θJC</sub>	2.42	°C/W

\* The device mounted on 1in2 FR4 board with 2 oz copper

**ELECTRICAL CHARACTERISTICS**T<sub>A</sub> = 25°C, unless otherwise specified.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>STATIC CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	250			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	2		4	V
Gate Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±25V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =200V, V <sub>GS</sub> =0V			1	μA
Drain-Source On-Resistance <sup>(2)</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> = 7A		180	220	mΩ
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V		0.74	1	V
<b>Dynamic CHARACTERISTICS</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =200V, V <sub>GS</sub> =10V, I <sub>D</sub> =14A		70		nC
Gate-Source Charge	Q <sub>gs</sub>			16.3		
Gate-Drain Charge	Q <sub>gd</sub>			24.6		
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=1MHz		1277		pF
Output Capacitance	C <sub>oss</sub>			118		
Reverse Transfer Capacitance	C <sub>rss</sub>			39		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DS</sub> =125V, R <sub>L</sub> =18Ω, V <sub>GEN</sub> =10V, R <sub>G</sub> =25Ω		44.4		ns
Turn-On Rise Time	t <sub>r</sub>			43.4		
Turn-Off Delay Time	t <sub>d(off)</sub>			199		
Turn-Off Fall Time	t <sub>f</sub>			75.9		

Notes (2): Pulse test: pulse width ≤ 300us, duty cycle ≤ 2%, Guaranteed by design, not subject to production testing.

(3): Matsuki Electric/ Force mos reserves the right to improve product design, functions and reliability without notice.



### TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. On Resistance vs. Junction Temperature

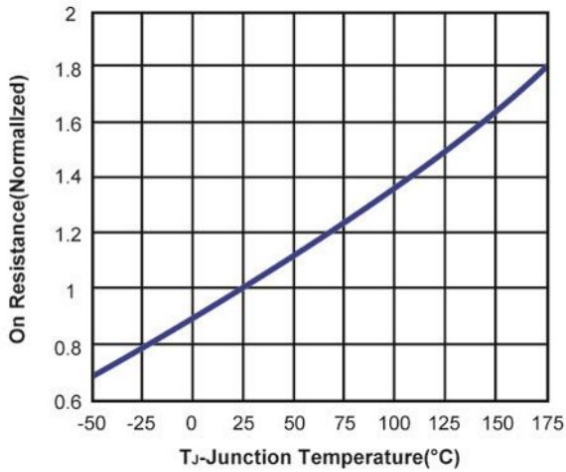


Fig 2. On Resistance vs. Drain Current

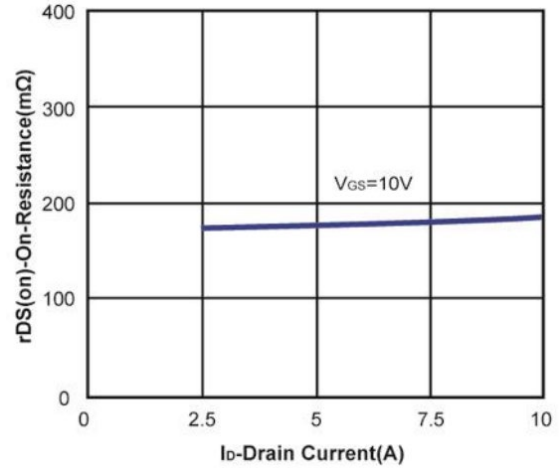


Fig 3. Capacitance

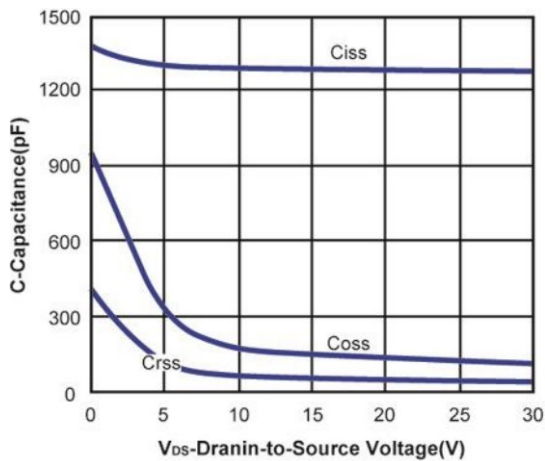


Fig 4. On Resistance vs. Gate-to-Source Voltage

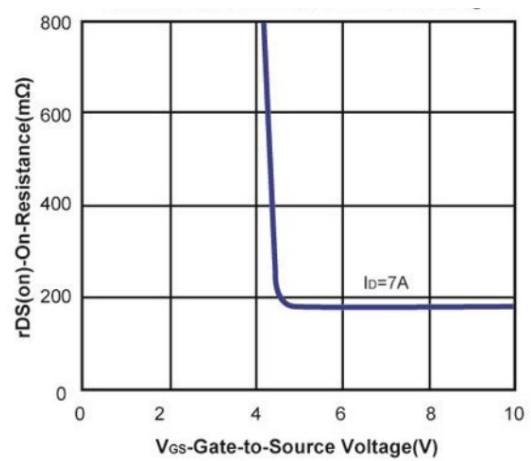


Fig 5. Threshold Voltage

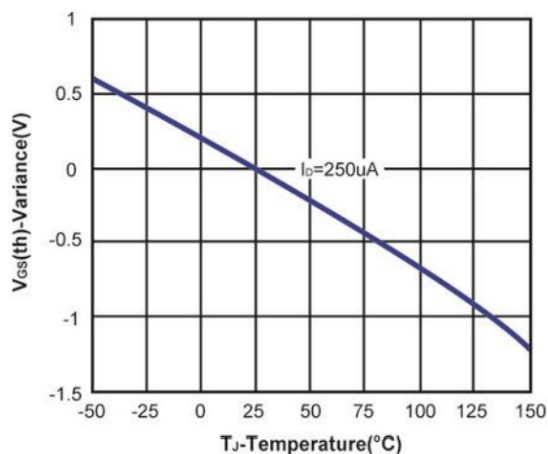


Fig 6. On-Region Characteristics

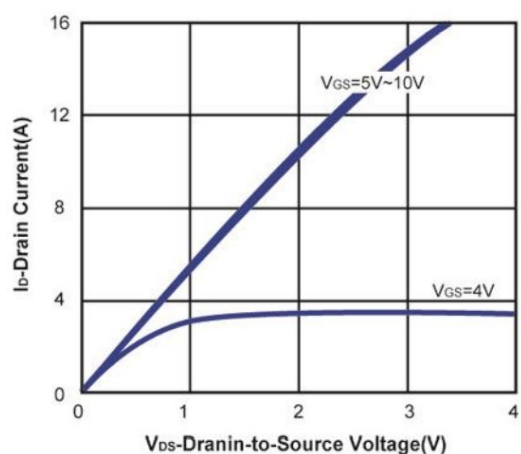




Fig 7. Gate Charge

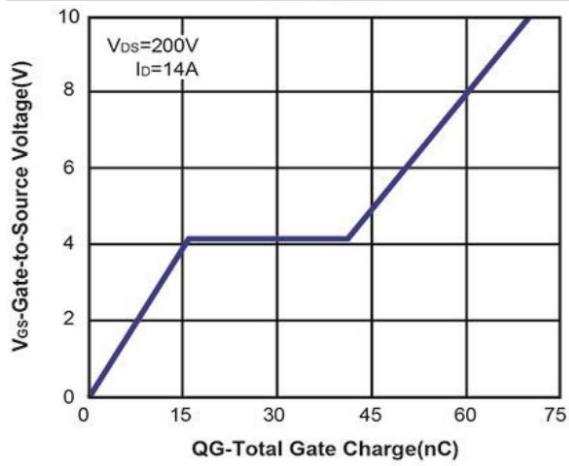


Fig 8. Body-diode characteristics

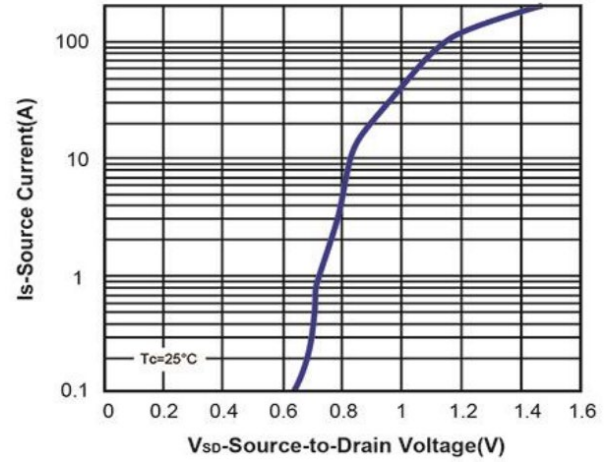


Fig 9. Maximum Forward Biased Safe Operating Area

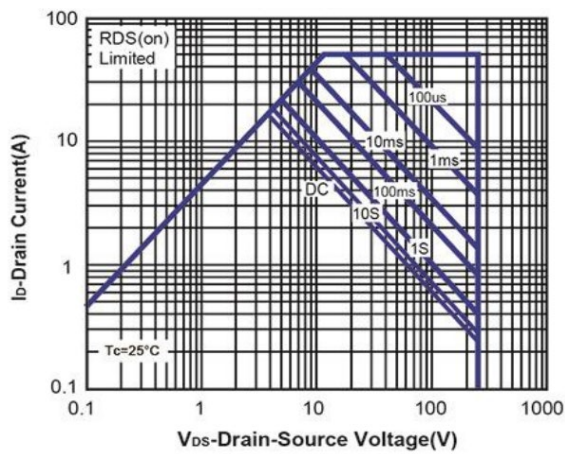
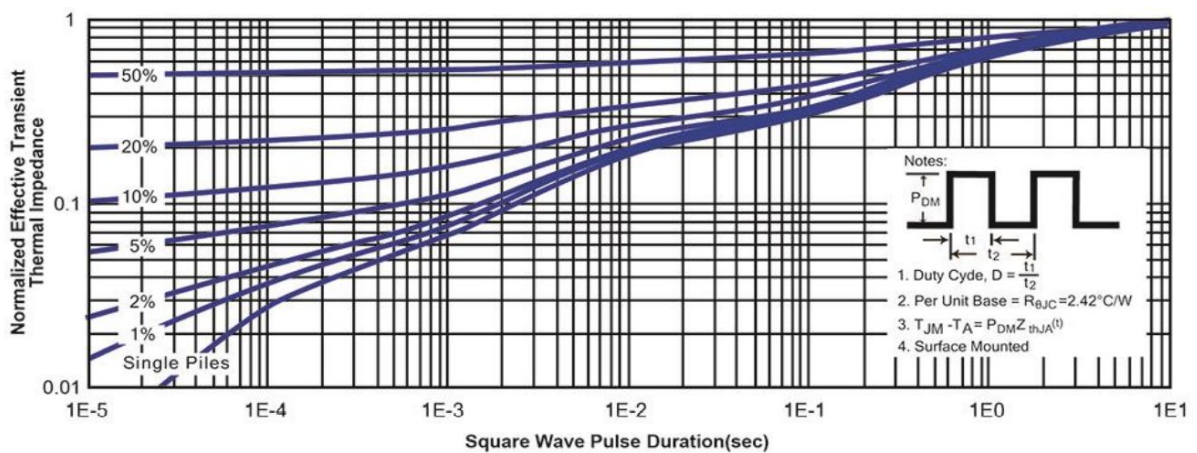


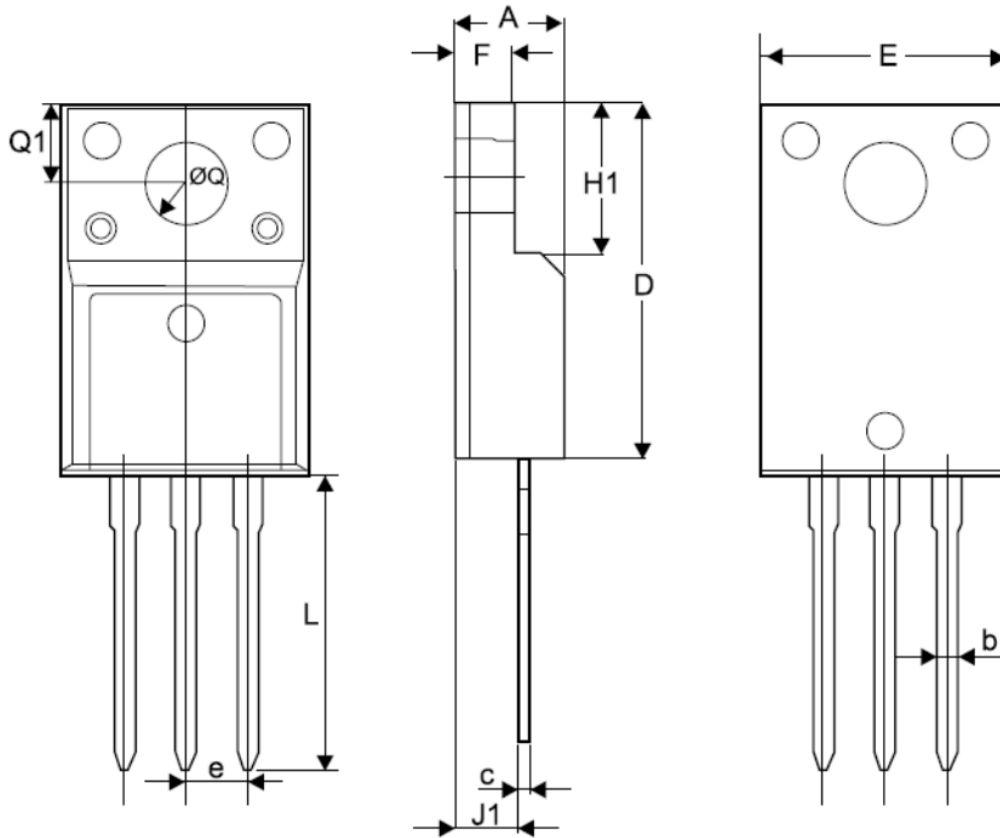
Fig 10. Normalized Thermal Transient Impedance, Junction-to-Case.





**PACKAGE INFORMATION**

Dimension in TO-220F (Unit: mm)



Symbol	Min.	Max.
A	4.400	5.000
b	0.600	1.000
C	0.300	0.700
D	15.40	16.40
E	6.960	10.46
F	2.300	2.800
E	2.540 TYP	
H1	6.400	7.000
J1	2.450	3.050
L	12.28	13.68
Ø Q	2.920	3.380
Q1	3.050	3.550



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