General Features

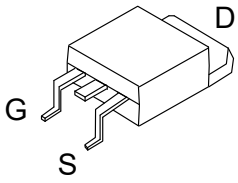
- Split gate trench MOSFET technology
- Low RDS(on) & FOM
- Extremely low switching loss
- Excellent stability and uniformity

Application

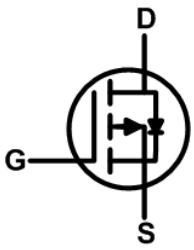
- Power management
- Portable equipment

Product Summary

V_{DS}	-100	V
$R_{DS(on),Typ}$@ V_{GS}=10 V	75	mΩ
I_D	-20	A



TO-252



P-channel

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	-100	V
Gate-source Voltage		V_{GS}	±20	V
Drain Current	Tc=25℃	I_D	-20	A
	Tc=100℃		-14	
Pulsed Drain Current [A]		I_{DM}	-80	A
Avalanche energy [B]		E_{AS}	100	mJ
Total Power Dissipation	Tc=25℃	P_D	72	W
	Tc=100℃		28.8	
Junction and Storage Temperature Range		T_J ,T_{STG}	-55～+150	℃

Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient [D]	t≤10S	$R_{\theta JA}$	15	20	℃/W
Thermal Resistance Junction-to-Ambient [D]	Steady-State		40	50	
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	1.35	1.7	

Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Conditions		Min	Typ	Max	Units
Static Parameter							
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=-250μA		-100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-100V,V_{GS}=0V	T_j=25℃			-1	μA
			T_j=55℃			-5	
			T_j=125℃			-10	
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V				±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-250μA		-1.0	-1.8	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= -10V, I_D=-10A			75	95	mΩ
		V_{GS}= -4.5V, I_D=-5A			85	110	
Diode Forward Voltage	V_{SD}	I_S=-10A,V_{GS}=0V				-1.3	V
Maximum Body-Diode Continuous Current	I_S					-20	A
Dynamic Parameters							
Input Capacitance	C_{iss}	V_{DS}=-50V,V_{GS}=0V,f=1MHZ			1051		pF
Output Capacitance	C_{oss}				119		
Reverse Transfer Capacitance	C_{rss}				25		
Switching Parameters							
Total Gate Charge	$Q_{g(-10V)}$	V_{GS}=-10V,V_{DS}=-50V,I_D=-5A			20.1		nC
Total Gate Charge	$Q_{g(-4.5V)}$				9.7		
Gate-Source Charge	Q_{gs}				3.9		
Gate-Drain Charge	Q_{gd}				4.3		
Reverse Recovery Chrage	Q_{rr}	I_F=-5A, di/dt=100A/us			140		
Reverse Recovery Time	t_{rr}				70		ns
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=-10V,V_{DD}=-50V,R_L=2.5Ω R_{GEN}=6Ω			10		
Turn-on Rise Time	t_r				30		
Turn-off Delay Time	$t_{D(off)}$				77		
Turn-off fall Time	t_f				81		

A. Repetitive rating; pulse width limited by max. junction temperature.
B. V_{DD}=50V, R_G=25Ω, L=0.5mH.
C. Pd is based on max. junction temperature, using junction-case thermal resistance.
D. The value of RθJA is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with TA =25° C. The Power dissipation PDSM is based on RθJA t≤ 10s and the maximum allowed junction temperature of 150° C. The value in any given application depends on the user's specific board design.

Typical Performance Characteristics

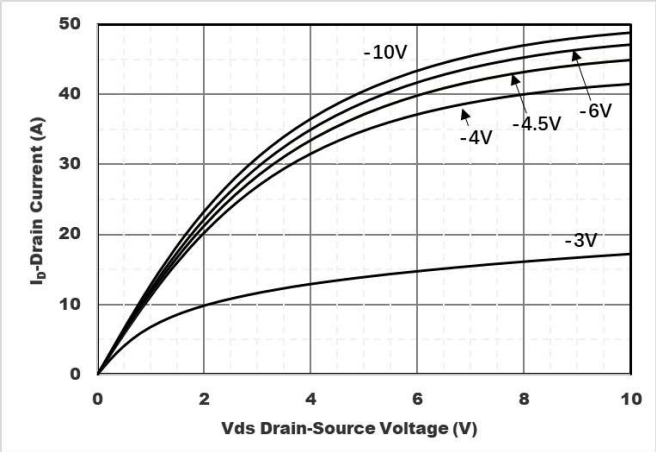


Figure1. Output Characteristics

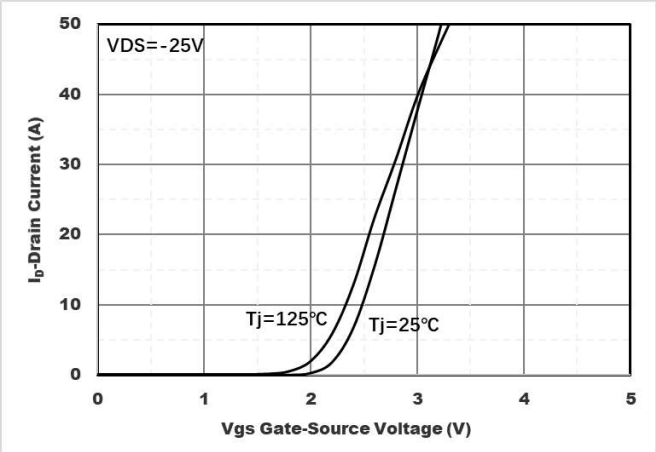


Figure2. Transfer Characteristics

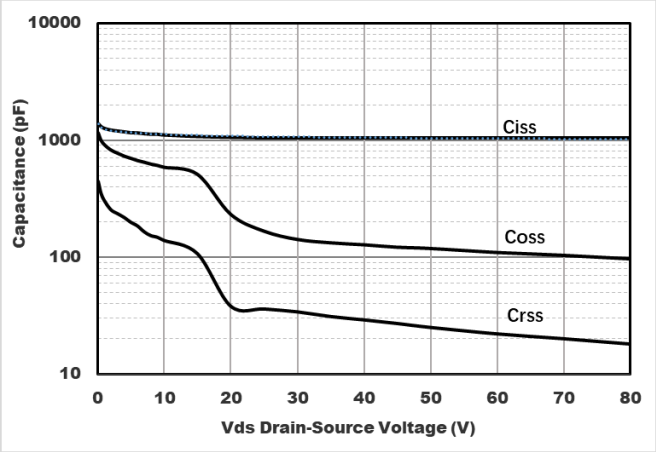


Figure3. Capacitance Characteristics

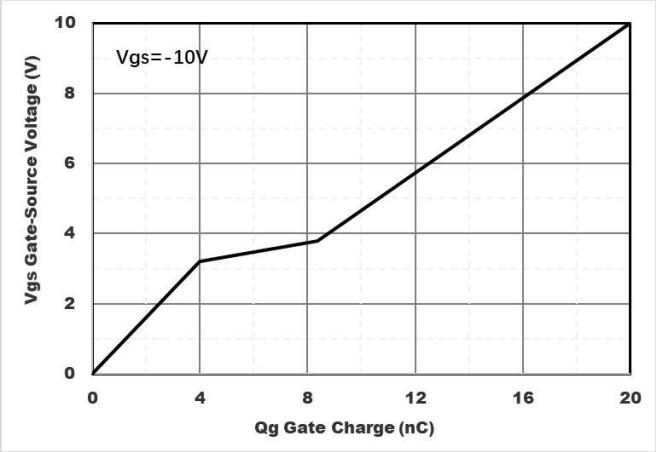


Figure4. Gate Charge

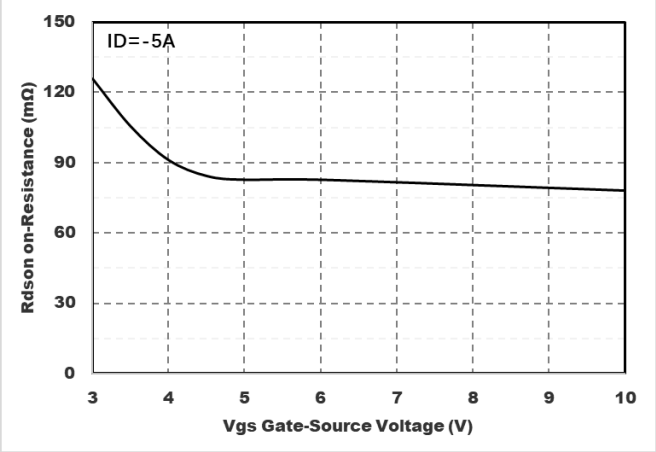


Figure5.：On-Resistance vs. Gate to Source Voltage

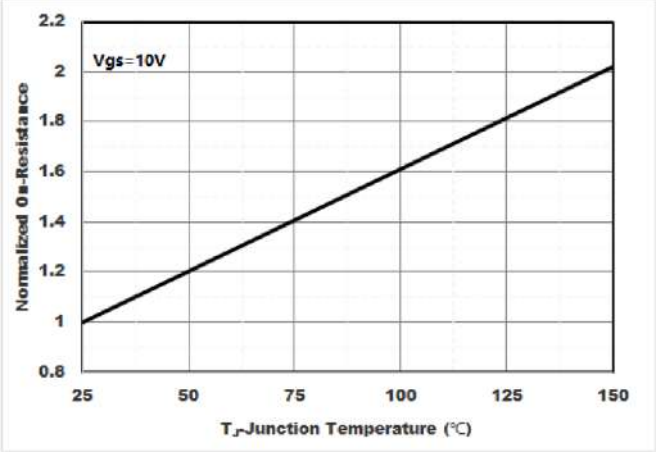


Figure6.Normalized On-Resistance

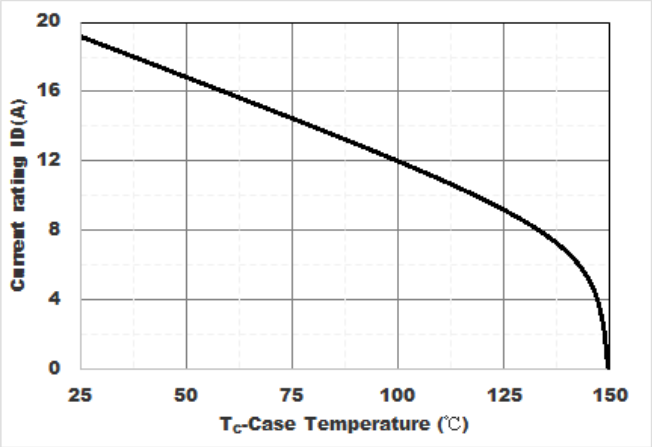


Figure7. Drain current

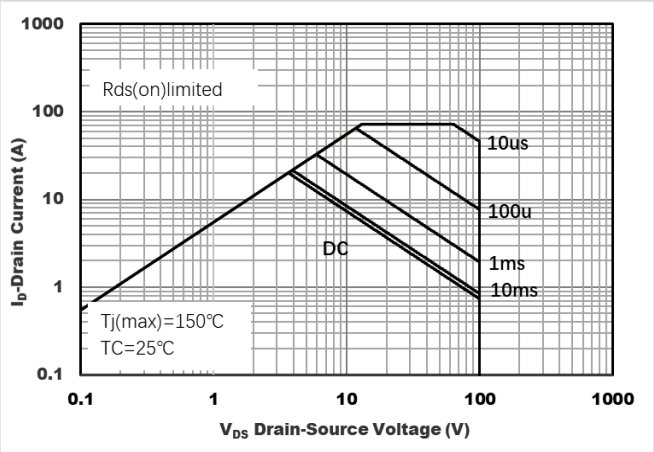


Figure8.Safe Operation Area

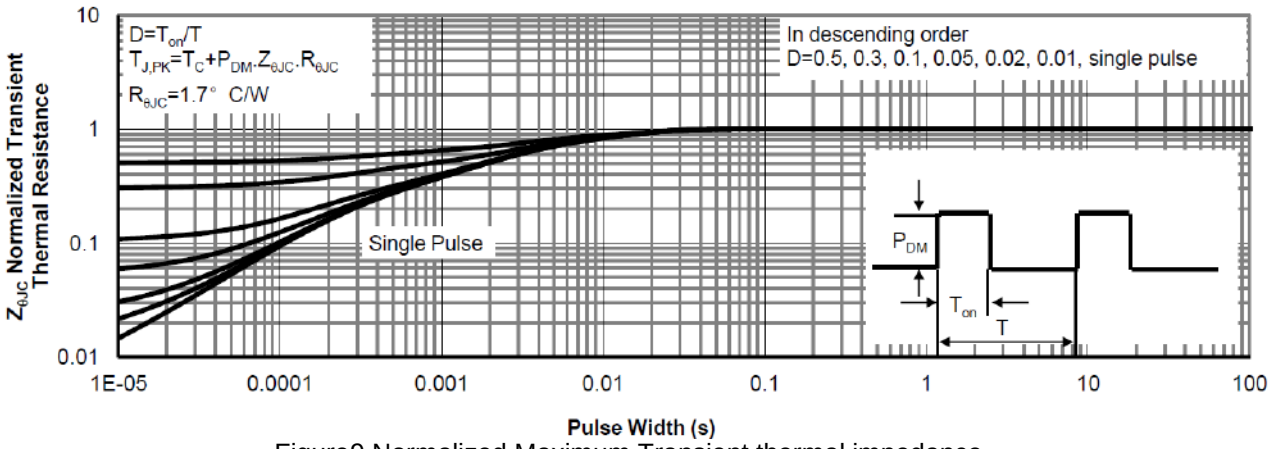
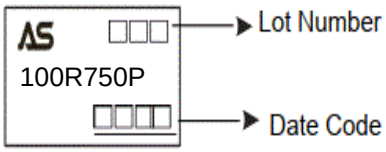


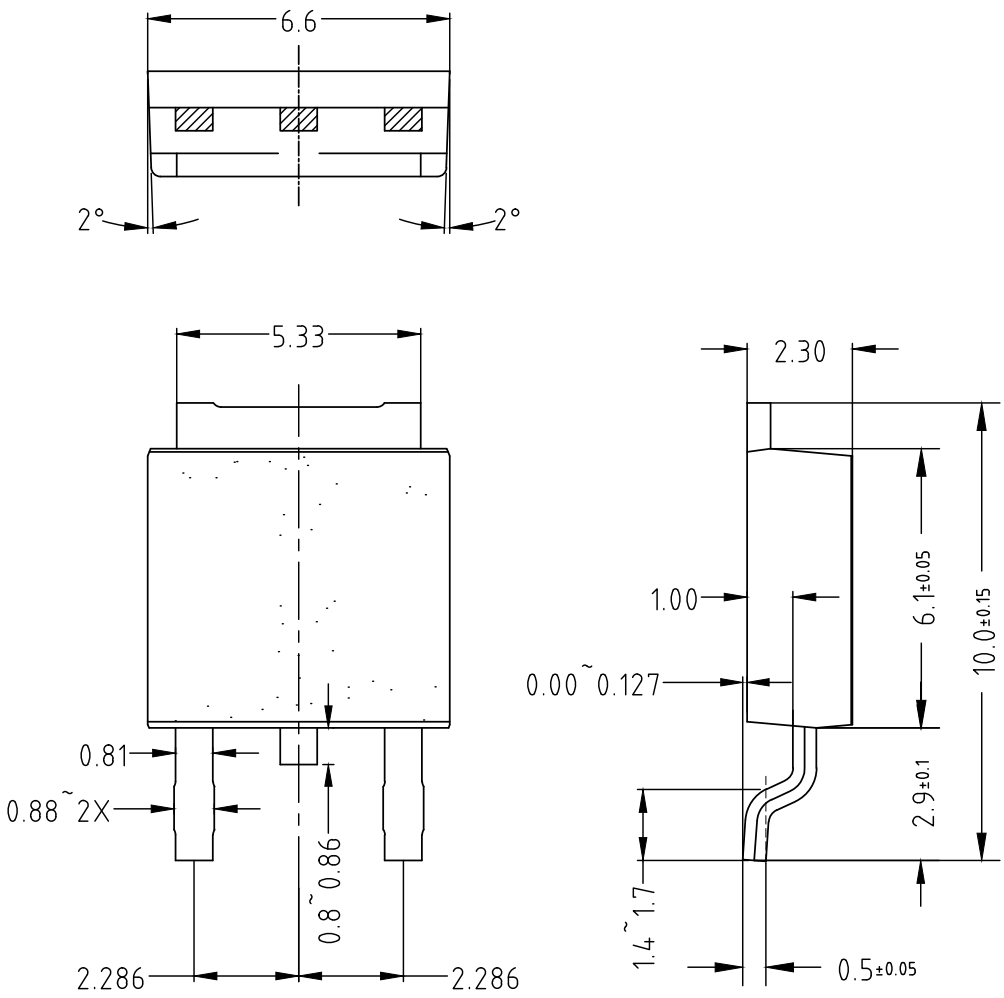
Figure9.Normalized Maximum Transient thermal impedance

Ordering and Marking Information

Ordering Device No.	Marking	Package	Packing	Quantity
ASDM100R750PKQ-R	100R750P	TO-252	Tape&Reel	2500/Reel

PACKAGE	MARKING
TO-252	

TO-252


6.6
2°
2°
5.33
0.81
0.88~2X
0.8~0.86
2.286
2.286
2.30
1.00
0.00~0.127
6.1±0.05
10.0±0.15
2.9±0.1
1.4~1.7
0.5±0.05

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