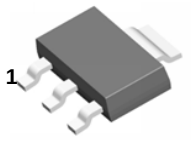
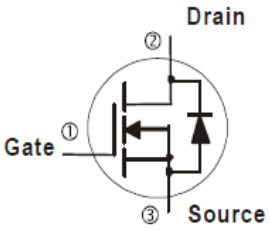
PJW5N10

100V N-Channel Enhancement Mode MOSFET

Voltage	100 V	Current	5 A

SOT-223





Features

- $R_{DS(ON)}$, V_{GS}@10V,I_D@2.5A<130mΩ
- $R_{DS(ON)}$, V_{GS}@6V,I_D@1A<135mΩ
- Low On-Resistance
- Low input capacitance
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SOT-223 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.123grams
- Marking : W5N10

Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNIT
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25°C	I_D	5	A
	T_C=100°C		3.1	
Pulsed Drain Current(Note 1)	T_C=25°C	I_{DM}	10	
Power Dissipation	T_C=25°C	P_D	8	W
	T_C=100°C		3.2	
Continuous Drain Current	T_A=25°C	I_D	3.1	A
	T_A=70°C		2.5	A
Power Dissipation	T_A=25°C	P_D	3.1	W
Power Dissipation	T_A=70°C		2	
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Typical Thermal resistance(Note 4,5)	Junction to Case	$R_{\theta JC}$	15.6	°C/W
	Junction to Ambient	$R_{\theta JA}$	40.3	

- Limited only By Maximum Junction Temperature

PJW5N10

Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250uA	100	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	2.0	2.76	3.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=2.5A	-	110	130	mΩ
		V_{GS}=6V,I_D=1A	-	120	135	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V,V_{GS}=0V	-	0.01	1.0	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	±20	±100	nA
Dynamic(Note 6)						
Total Gate Charge	Q_g	V_{DS}=37.5V, I_D=5A, V_{GS}=10V(Note 2,3)	-	12	-	nC
Gate-Source Charge	Q_{gs}		-	3.1	-	
Gate-Drain Charge	Q_{gd}		-	2.2	-	
Input Capacitance	Ciss	V_{DS}=30V, V_{GS}=0V, f=1.0MHZ	-	707	-	pF
Output Capacitance	Coss		-	40	-	
Reverse Transfer Capacitance	Crss		-	16	-	
Turn-On Delay Time	$td_{(on)}$	V_{DS}=37.5V,RL=7.5Ω, V_{GS}=10V, R_G=3Ω (Note 2,3)	-	6	-	ns
Turn-On Rise Time	t_r		-	27	-	
Turn-Off Delay Time	$td_{(off)}$		-	15	-	
Turn-Off Fall Time	t_f		-	7	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	5	A
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V	-	0.78	1	V

NOTES :

1. Pulse width≤300us, Duty cycle≤2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature TJ(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial TJ =25°C.
4. The maximum current rating is package limited.
5. $R_{\Theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 $inch^2$ with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing.

PJW5N10

TYPICAL CHARACTERISTIC CURVES

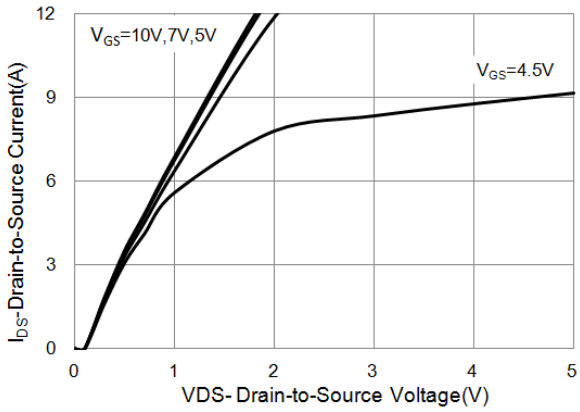


Fig.1 Output Characteristics

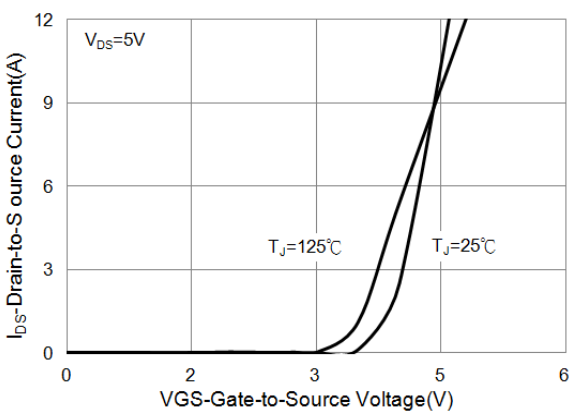


Fig.2 Transfer Characteristics

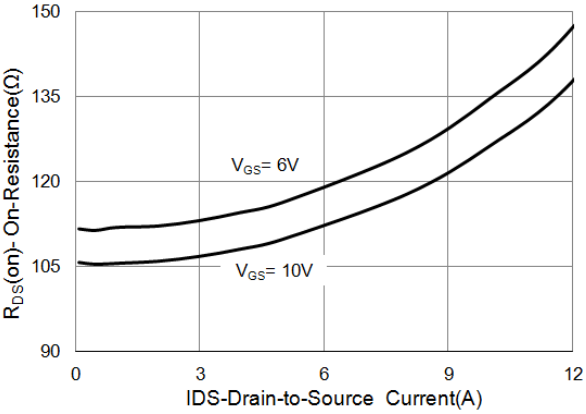


Fig.3 On-Resistance vs. Drain Current

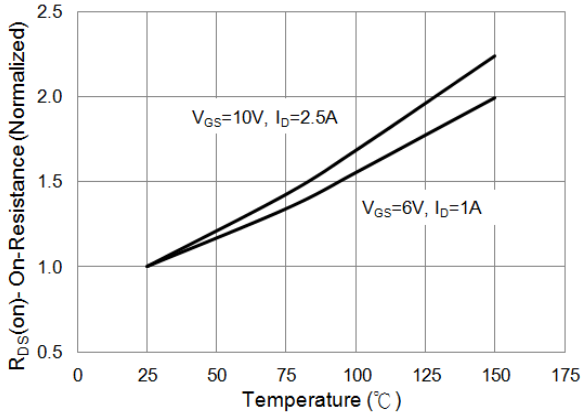


Fig.4 On-Resistance vs. Junction temperature

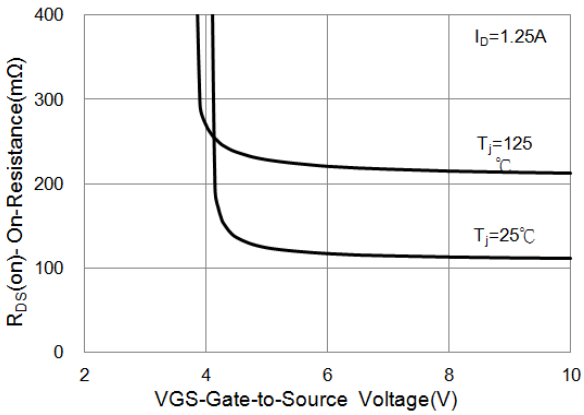


Fig.5 On-Resistance Variation with VGS.

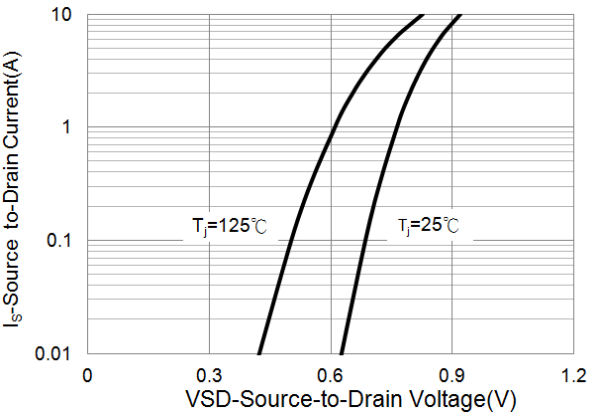


Fig.6 Source-Drain Diode Forward Voltage

PJW5N10

TYPICAL CHARACTERISTIC CURVES

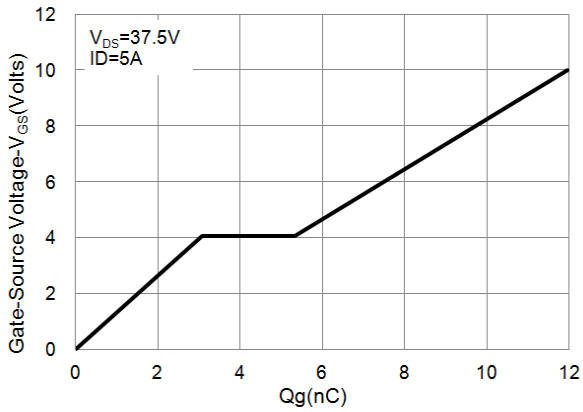


Fig.7 Gate-Charge Characteristics

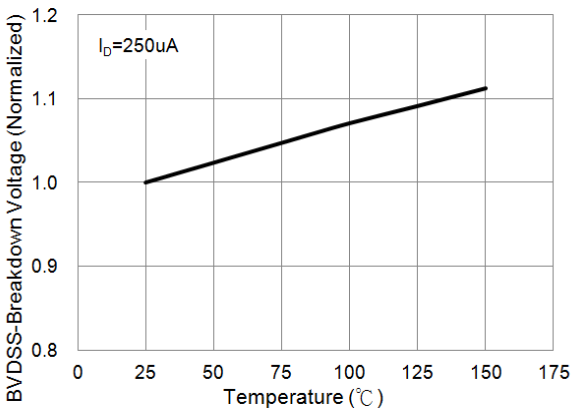


Fig.8 Breakdown Voltage Variation vs. Temperature

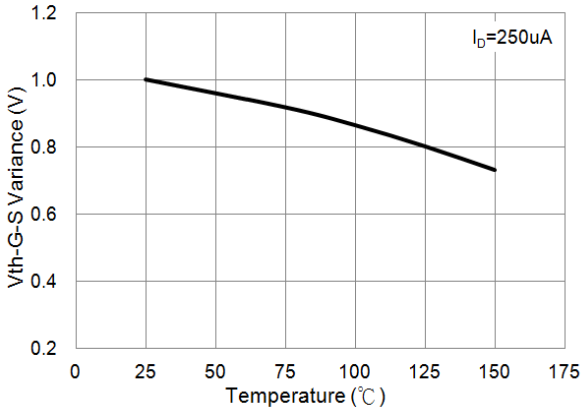


Fig.9 Threshold Voltage Variation with Temperature

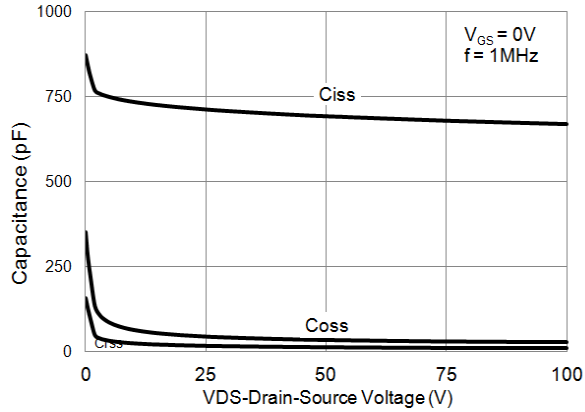


Fig.10 Capacitance vs. Drain-Source Voltage

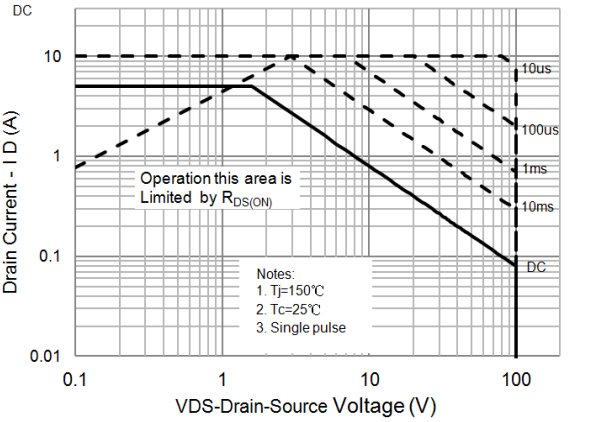


Fig.11 Maximum Safe Operating Area

PJW5N10

TYPICAL CHARACTERISTIC CURVES

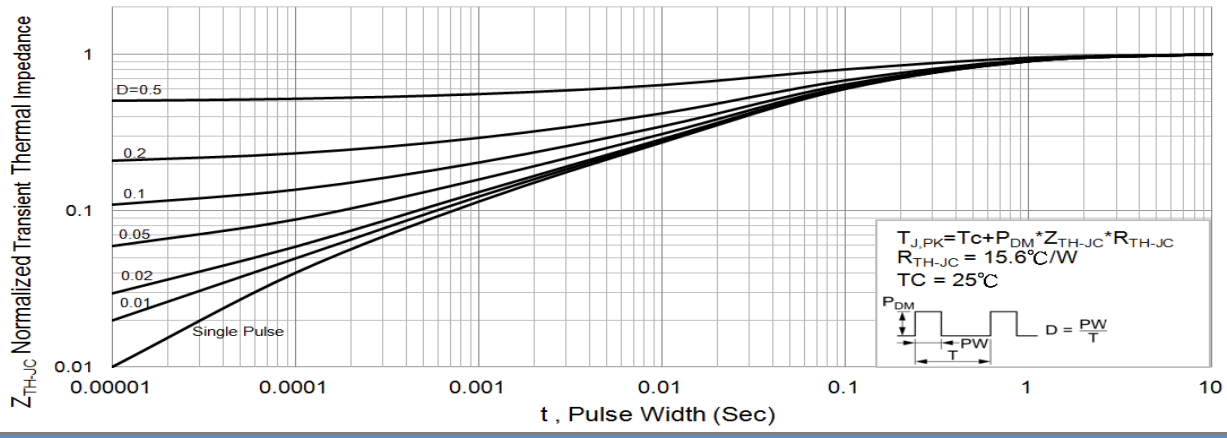


Fig.12 Normalized Transient Thermal Impedance vs. Pulse Width

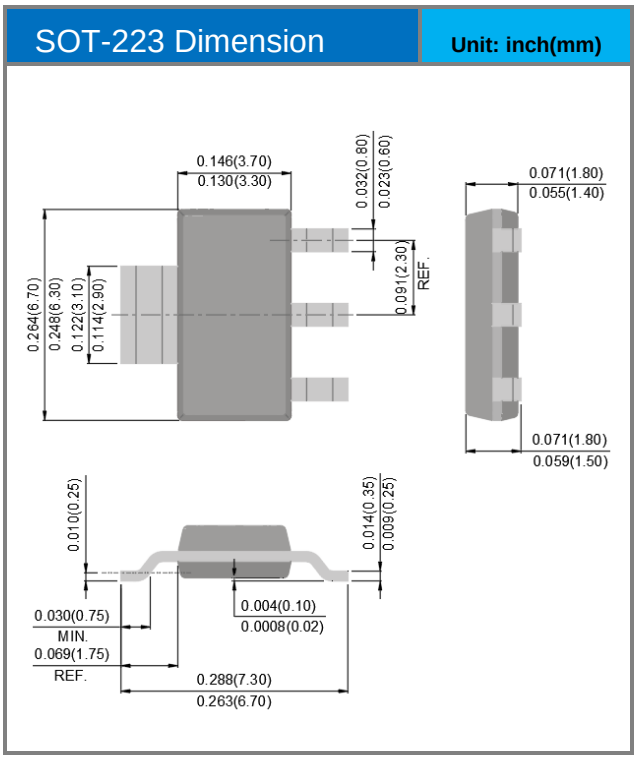
PJW5N10

Product and Packing Information

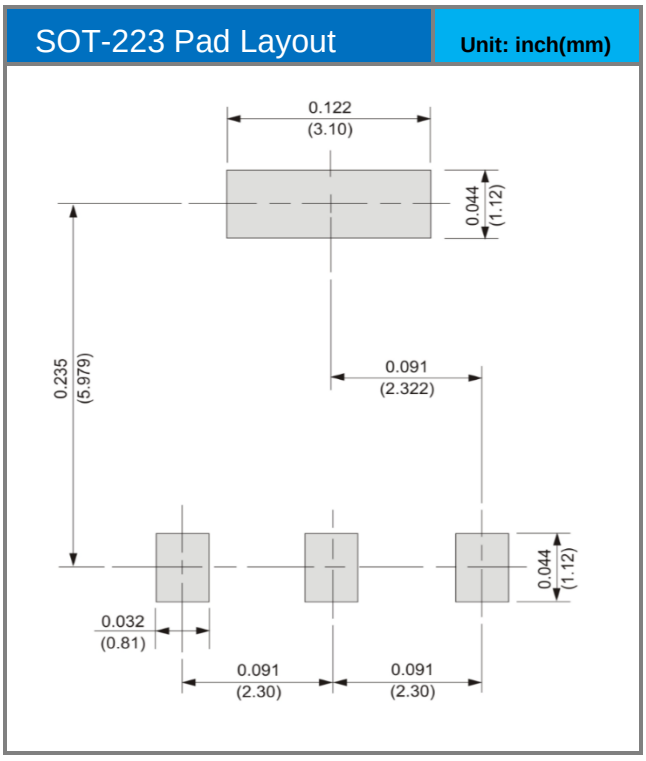
Part No.	Package Type	Packing type	Marking
PJW5N10	SOT-223	2,500pcs / 13” reel	W5N10

Packaging Information & Mounting Pad Layout

SOT-223 Dimension — Unit: inch(mm)



SOT-223 Pad Layout — Unit: inch(mm)



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