



PJ2306

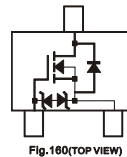
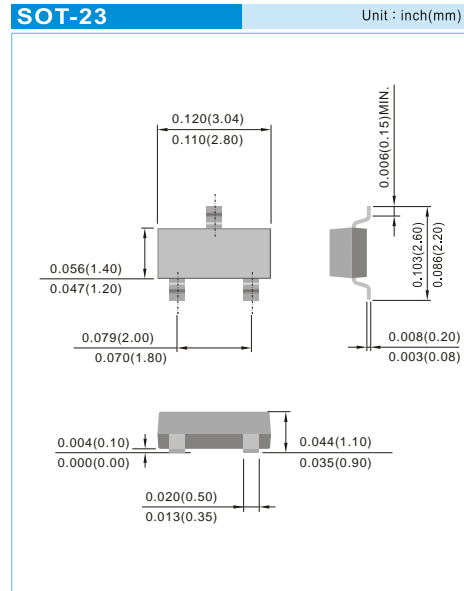
30V N-Channel Enhancement Mode MOSFET-ESD Protected

Features

- $R_{DS(ON)}, V_{GS}@10V, I_{DS}@3.2A=65m\Omega$
- $R_{DS(ON)}, V_{GS}@4.5V, I_{DS}@2.8A=85m\Omega$
- Advanced Trench Process Technology
- High Density Cell Design For Ultra Low On-Resistance
- Very Low Leakage Current In Off Condition
- Specially Designed for Load Switch, PWM Applications
- ESD Protected
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Green molding compound as per IEC61249 Std. (Halogen Free)

Mechanical Data

- Case: SOT-23 Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.084 grams
- Marking: 06



Maximum Ratings and Thermal Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS	
Drain-Source Voltage	V_{DS}	30	V	
Gate-Source Voltage	V_{GS}	± 20	V	
Continuous Drain Current	I_D	3.2	A	
Pulsed Drain Current ¹⁾	I_{DM}	16	A	
Maximum Power Dissipation	P_D	$T_A=25^\circ\text{C}$	1.25	W
		$T_A=75^\circ\text{C}$	0.75	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$	
Junction to Ambient Thermal Resistance (PCB mounted) ²	$R_{\theta JA}$	100	$^\circ\text{C/W}$	

Note:1. Maximum DC current limited by the package
2. Surface mounted on FR4 board, $t \leq 5$ sec

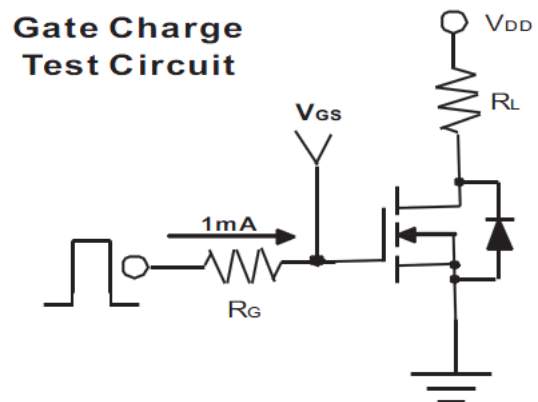
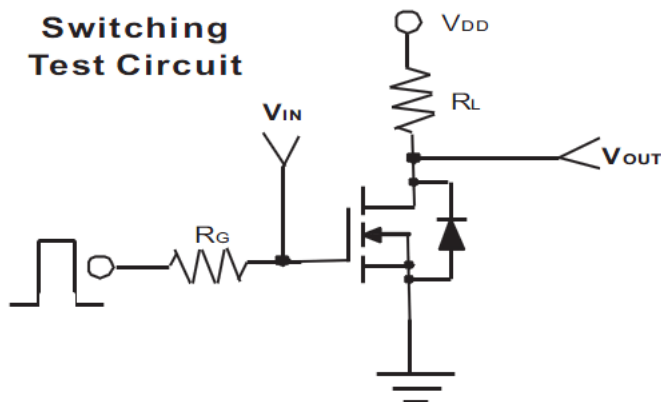


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Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	-	2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=2.8A$	-	72	85	mΩ
		$V_{GS}=10V, I_D=3.2A$	-	55	65	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$	-	-	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$	-	-	±10	μA
Forward Transconductance	g_{fs}	$V_{GS}=4.5V, I_D=2.8A$	3	-	-	S
Diode Forward Voltage	V_{SD}	$I_S=2.8A, V_{GS}=0V$	-	0.88	1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=15V, I_D=3.2A,$ $V_{DS}=5V$	-	2.8	3.5	nC
		$V_{DS}=15V, I_D=3.2A,$ $V_{GS}=10V$	-	5	6.5	
Gate-Source Charge	Q_{gs}	$V_{DS}=15V, I_D=3.2A,$ $V_{GS}=10V$	-	0.5	-	ns
Gate-Drain Charge	Q_{gd}	$V_{DS}=15V, I_D=3.2A,$ $V_{GS}=10V$	-	1.1	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=15V, R_L=15\Omega$ $I_D=1A, V_{GEN}=10V,$ $R_G=6\Omega$	-	8.6	11.2	ns
Turn-On Rise Time	t_r		-	12.8	16.8	
Turn-Off Delay Time	$t_{d(off)}$		-	18.6	26	
Turn-Off Fall Time	t_f		-	1.9	2.6	
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V$ $f=1MHz$	-	270	-	pF
Output Capacitance	C_{oss}		-	45	-	
Reverse Transfer Capacitance	C_{rss}		-	30	-	

NOTES : Plus Test : Pluse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.





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Typical Characteristics Curves ($T_a=25^\circ\text{C}$, unless otherwise noted)

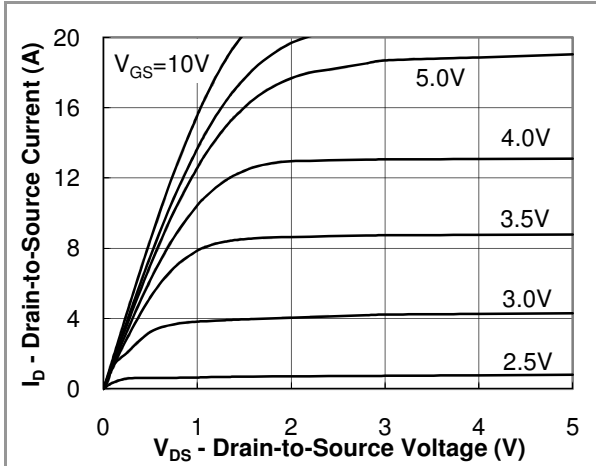


Fig.1 Output Characteristic

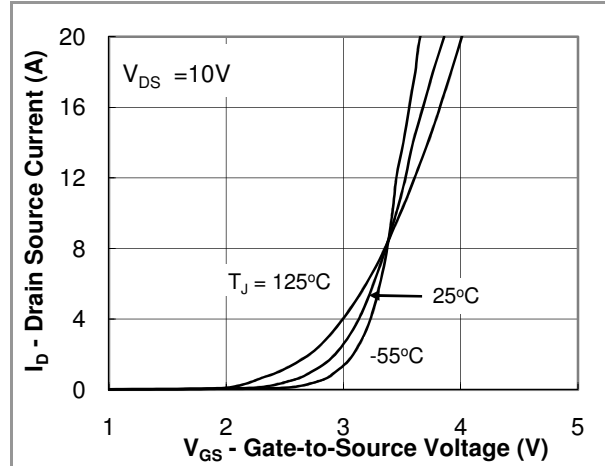


Fig.2 Transfer Characteristic

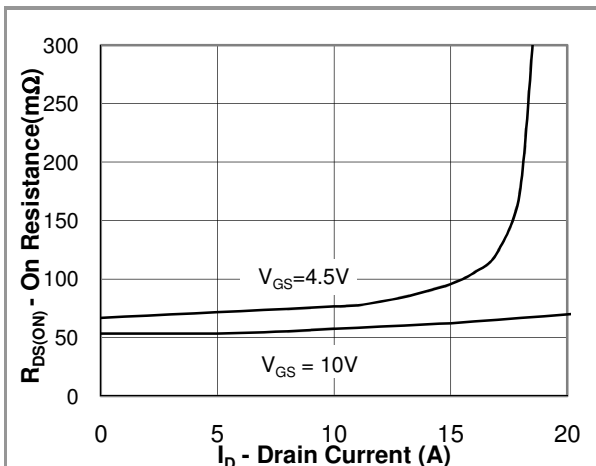


Fig.3 On Resistance vs Drain Current

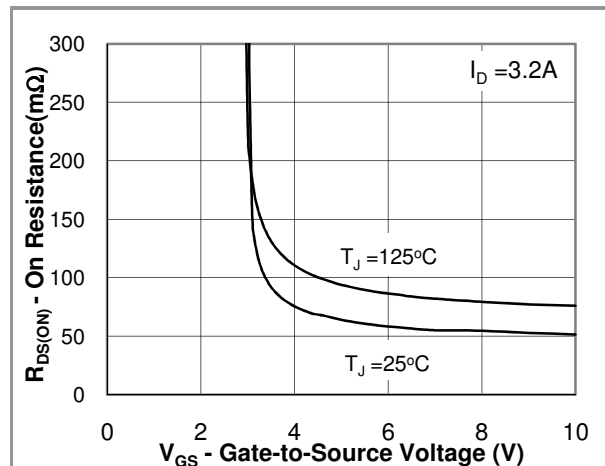


Fig.4 On Resistance vs Gate to Source Voltage

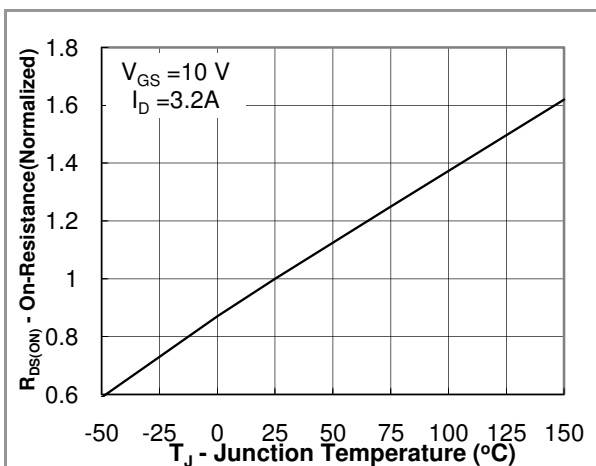


Fig.5 On Resistance vs Junction Temperature

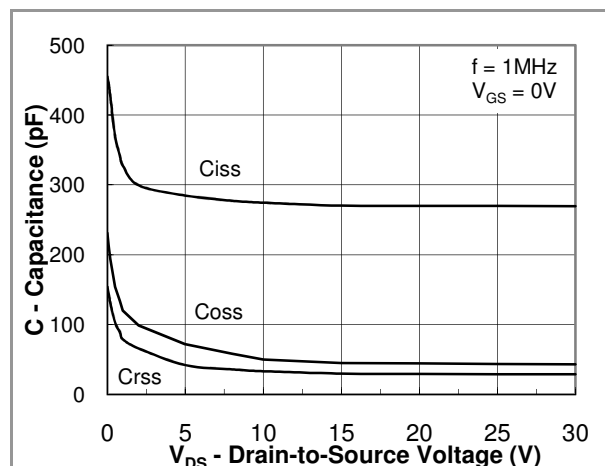


Fig.6 Capacitance



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Typical Characteristics Curves (Ta=25°C, unless otherwise noted)

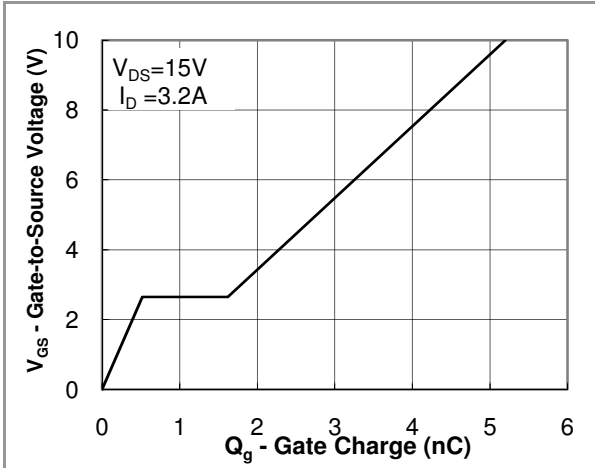


Fig. 7 Gate Charge Waveform

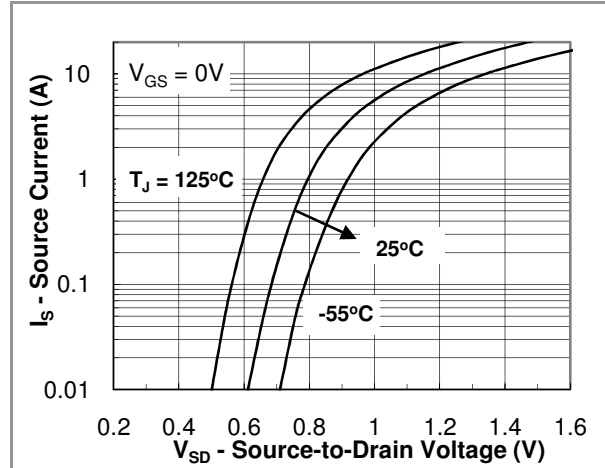


Fig.8 Source-Drain Diode Forward Voltage

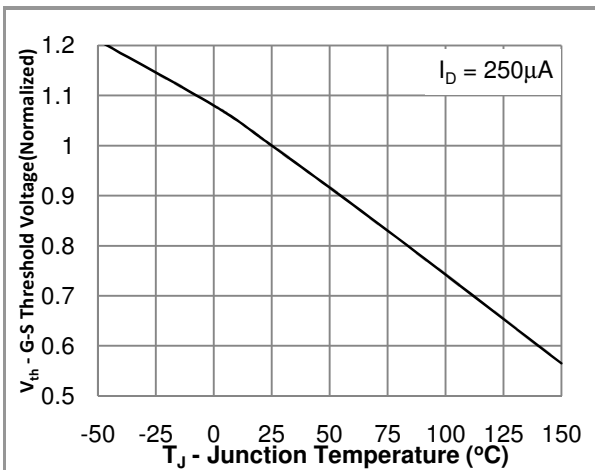
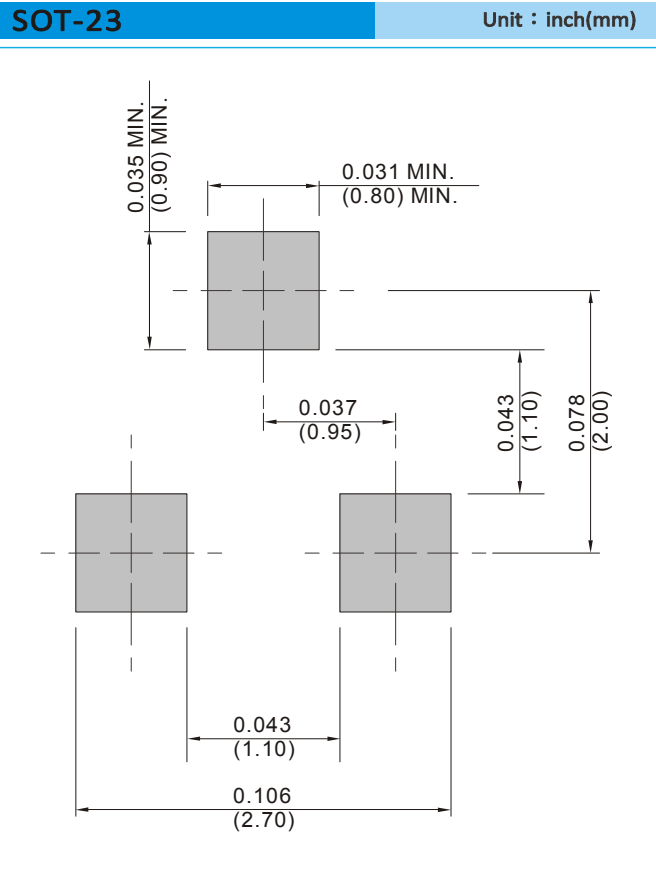


Fig.9 Breakdown Voltage vs Junction Temperature



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
 - T/R - 12K per 13" plastic Reel
 - T/R - 3K per 7" plastic Reel



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Part No_packing code_Version

PJ2306_R1_00001

PJ2306_R2_00001

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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