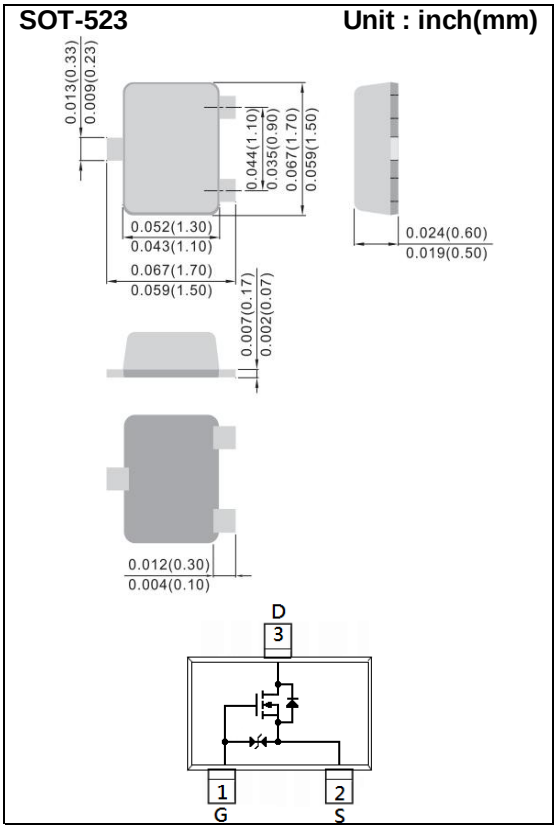
PJE8406

20V N-Channel Enhancement Mode MOSFET – ESD Protected

Voltage	20 V	Current	800mA



Features

- $R_{DS(ON)}$, V_{GS}@4.5V,I_{DS}@500mA=0.4Ω
- $R_{DS(ON)}$, V_{GS}@2.5V,I_{DS}@300mA=0.7Ω
- $R_{DS(ON)}$, V_{GS}@1.8V,I_{DS}@100mA=1.2Ω(typ)
- Advanced Trench Process Technology
- Specially Designed for Load Switch or PWM application.
- 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-523 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00007 ounces, 0.002 grams
- Marking: E06

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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current		I_D	800	mA
Pulsed Drain Current		I_{DM}	3000	mA
Power Dissipation	T_A=25°C	P_D	350	mW
	Derate above 25°C		2.8	mW/°C
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Typical Thermal resistance - Junction to Ambient (Note 3)		$R_{\theta JA}$	357	°C/W

PJE8406

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250uA	20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	0.4	0.63	1.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=4.5V,I_D=500mA	-	0.35	0.4	Ω
		V_{GS}=2.5V,I_D=300mA	-	0.6	0.7	
		V_{GS}=1.8V,I_D=100mA	-	1.2	-	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=16V,V_{GS}=0V	-	0.02	1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±4.5V,V_{DS}=0V	-	±0.05	±1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±10V,V_{DS}=0V	-	±2	±10	uA
Dynamic						
Total Gate Charge	Q_g	V_{DS}=10V, I_D=500mA, V_{GS}=4.5V (Note 1,2)	-	0.92	-	nC
Gate-Source Charge	Q_{gs}		-	0.31	-	
Gate-Drain Charge	Q_{gd}		-	0.08	-	
Input Capacitance	Ciss	V_{DS}=10V, V_{GS}=0V, f=1.0MHZ	-	50	-	pF
Output Capacitance	Coss		-	10	-	
Reverse Transfer Capacitance	Crss		-	8.5	-	
Switching						
Turn-On Delay Time	$td_{(on)}$	V_{DD}=10V, I_D=500mA, V_{GS}=4.5V, R_G=6Ω (Note 1,2)	-	4	-	ns
Turn-On Rise Time	tr		-	20	-	
Turn-Off Delay Time	$td_{(off)}$		-	12	-	
Turn-Off Fall Time	tf		-	25	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	500	mA
Diode Forward Voltage	V_{SD}	I_S=500mA, V_{GS}=0V	-	0.91	1.3	V

NOTES:

1. Pulse width≤300us, Duty cycle≤2%
2. Essentially independent of operating temperature typical characteristics.
3. $R_{\Theta JA}$ 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 square pad of copper

PJE8406

TYPICAL CHARACTERISTIC CURVES

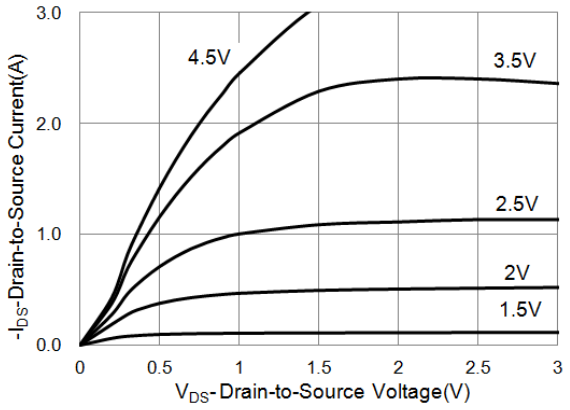


Fig.1 On-Region Characteristics

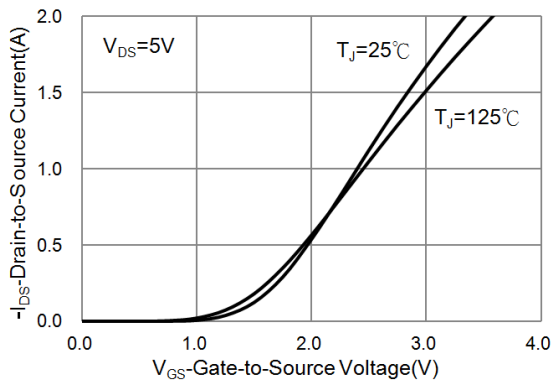


Fig.2 Transfer Characteristics

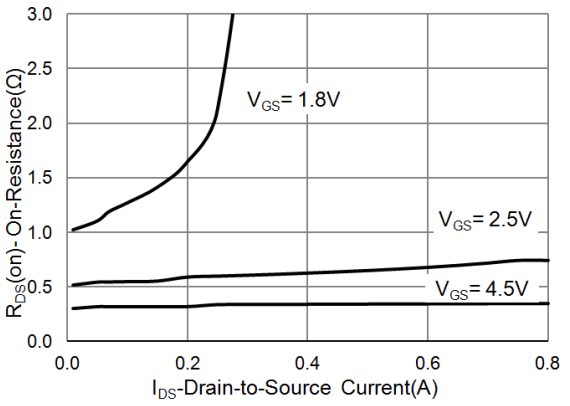


Fig.3 On-Resistance vs. Drain Current

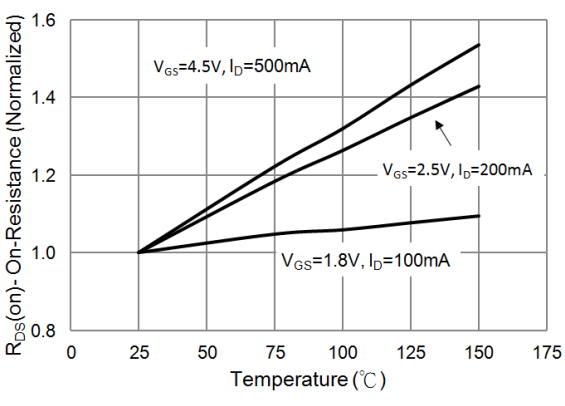


Fig.4 On-Resistance vs. Junction temperature

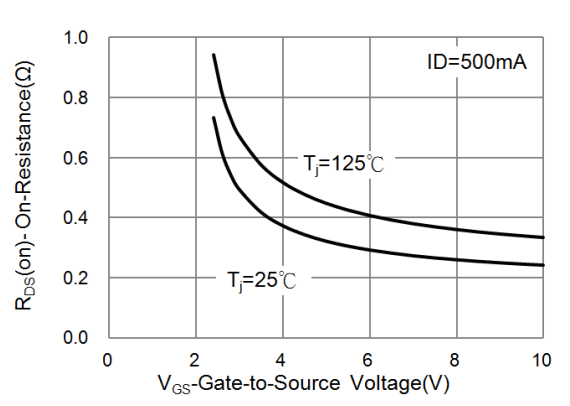


Fig.5 On-Resistance Variation with VGS.

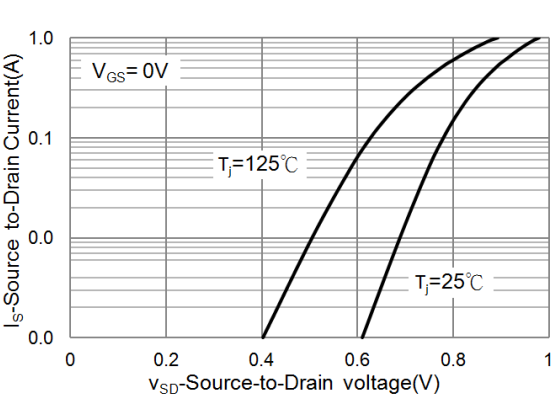


Fig.6 Body Diode Characteristics

PJE8406

TYPICAL CHARACTERISTIC CURVES

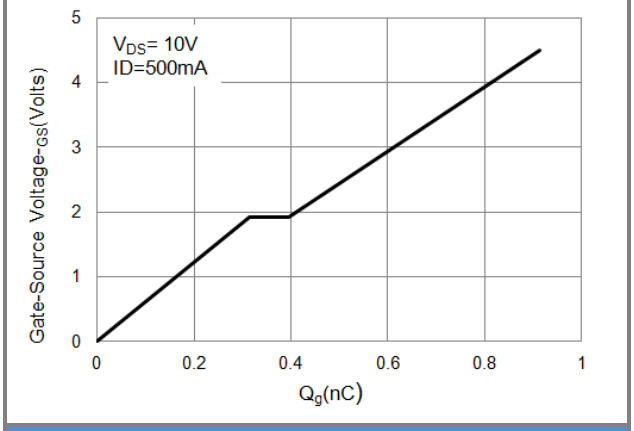


Fig.7 Gate-Charge Characteristics

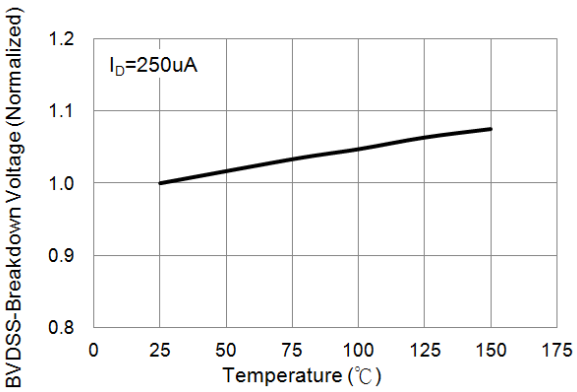


Fig.8 Breakdown Voltage Variation vs. Temperature

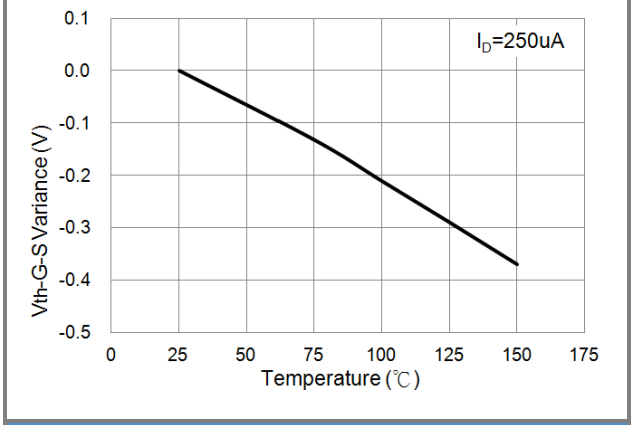


Fig.9 Threshold Voltage Variation with Temperature.

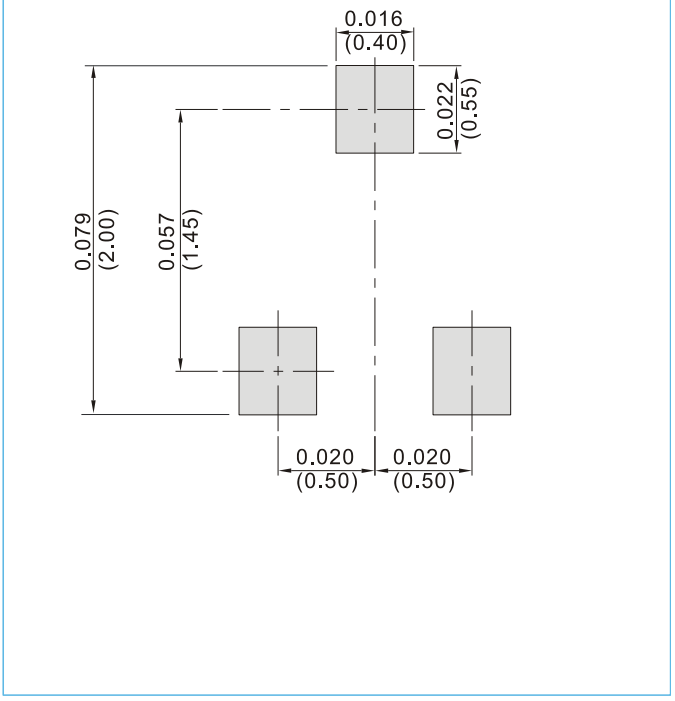
PJE8406

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJE8406_R1_00001	SOT-523	4K pcs / 7” reel	E06	Halogen free

MOUNTING PAD LAYOUT

SOT-523 Unit : inch(mm)



PJE8406

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