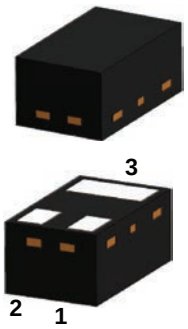
P-Channel MOSFET

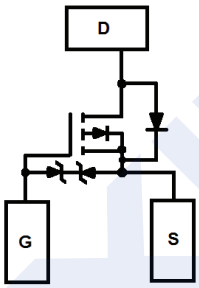
2KJ6046DFN

■ Features

- $V_{DS\ (V)}$ = -20V
- I_D = -1.4A
- $R_{DS(ON)}$ <0.48Ω @ V_{GS} = -4.5V, I_D = -780mA
- $R_{DS(ON)}$ <0.67Ω @ V_{GS} = -2.5V, I_D = -660mA
- $R_{DS(ON)}$ <0.95Ω @ V_{GS} = -1.8V, I_D = -100mA
- $R_{DS(ON)}$ <2.2Ω @ V_{GS} = -1.5V, I_D = -100mA
- ESD protection > 2kV HBM

SOT-883 (DFN1006-3)





■ Absolute Maximum Ratings (T_A = 25℃ Unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±6	
Continuous Drain Current	I_D	-1.4	A
Pulsed Drain Current (Note 1)	I_{DM}	-5.0	
Power Dissipation	P_D	100	mW
Thermal Resistance, Junction- to-Ambient (Note 2)	$R_{\theta JA}$	1250	℃/W
Junction Temperature	T_J	150	℃
Junction Storage Temperature Range	T_{stg}	-55 to 150	

Notes:

1. The maximum current rating is package limited.
2. $R_{\theta JA}$ 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 FR-4 with 2oz. square pad of copper.

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■ Electrical Characteristics (T_A = 25℃ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA, V_{GS}=0V	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V			±10	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=-250μA	-0.4		-1.2	V
Static Drain-Source On-Resistance (Note 3)	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-780mA			0.48	Ω
		V_{GS}=-2.5V, I_D=-660mA			0.67	
		V_{GS}=-1.8V, I_D=-100mA			0.95	
		V_{GS}=-1.5V, I_D=-100mA			2.2	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-16V, f=1MHz		152		pF
Output Capacitance	C_{oss}			18.5		
Reverse Transfer Capacitance	C_{rss}			6		
Total Gate Charge	Q_g	V_{DS}=-16V, I_D=-200mA, V_{GS} = –4.5V		2.8		nC
Gate Source Charge	Q_{gs}			2.1		
Gate Drain Charge	Q_{gd}			0.5		
Switching Characteristics						
Turn-On DelayTime	$t_{d(on)}$	V_{DD}=-10V, I_D=-200mA, V_{GEN} =-5V, R_G=10Ω, R_L=50Ω (Note 3,4)		51.3		ns
Turn-On Rise Time	t_r			24.2		
Turn-Off DelayTime	$t_{d(off)}$			246		
Turn-Off Fall Time	t_f			81.2		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	I_{SD} = -350mA,V_{GS}=0V			-1.2	V

Notes

3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%
4. Essentially independent of operating temperature typical characteristics.
5. Guaranteed by design, not subject to production testing

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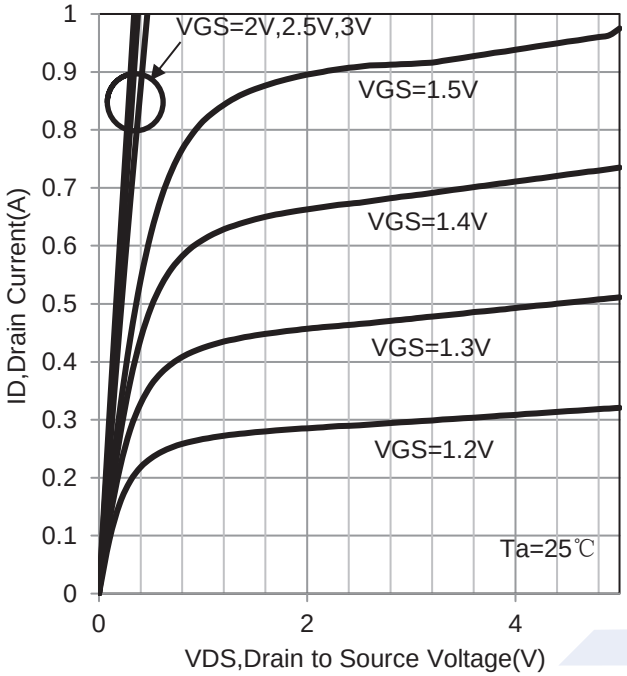
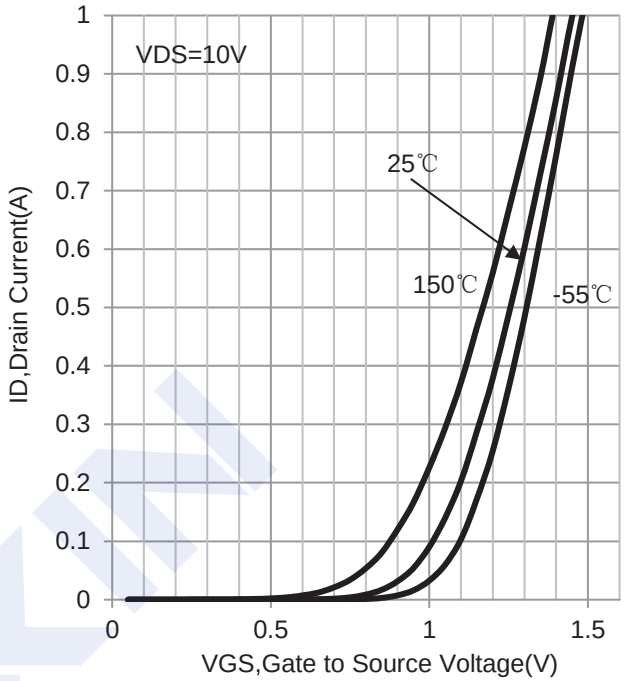
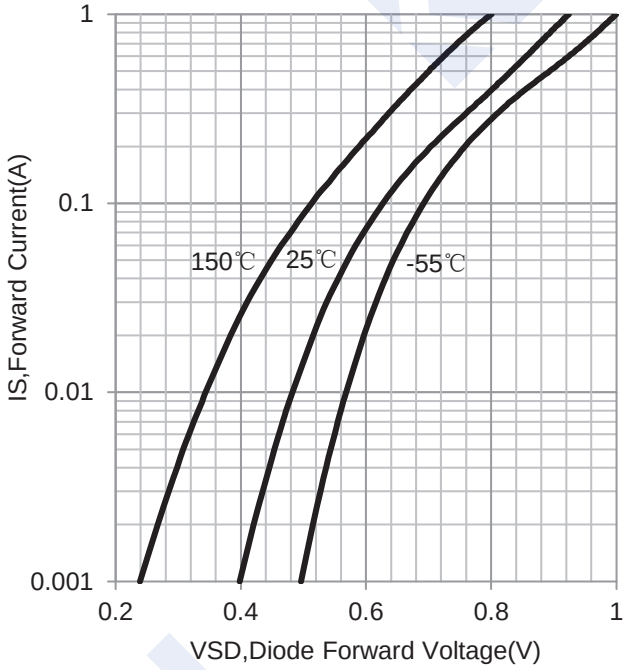
■ Typical Characterisitics



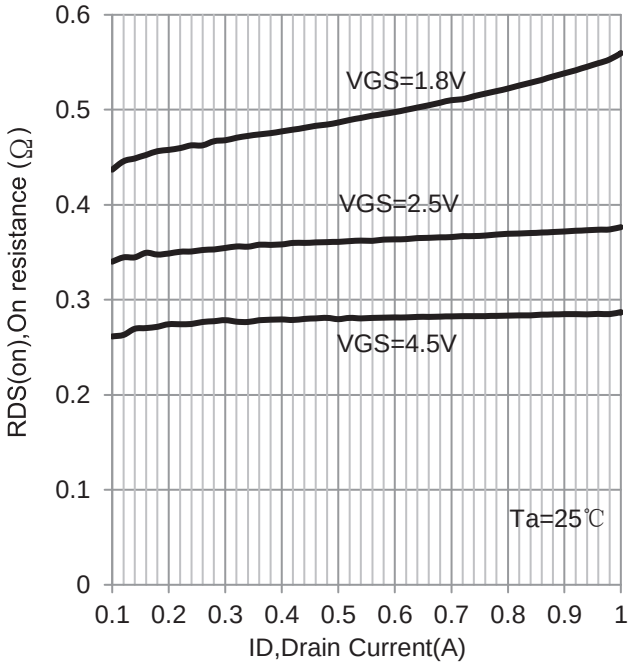
ID vs. VDS



ID vs. VGS



IS vs. VSD



RDS(on) vs. ID

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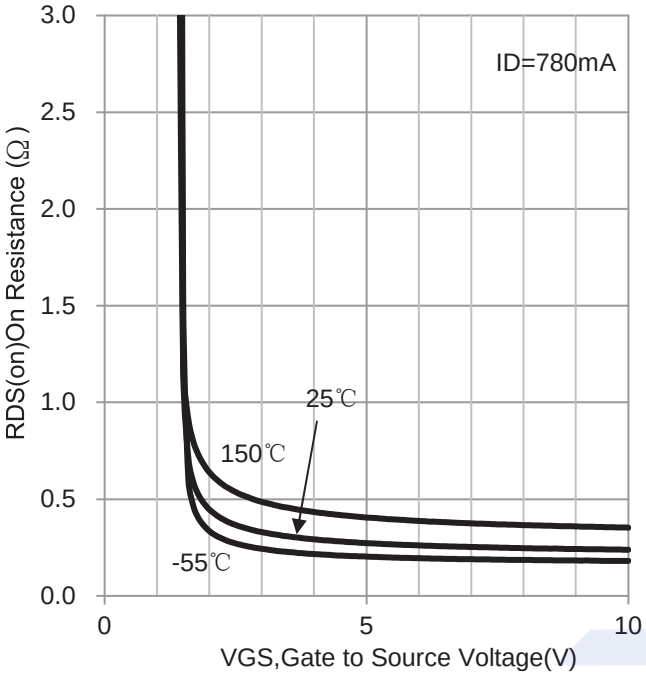
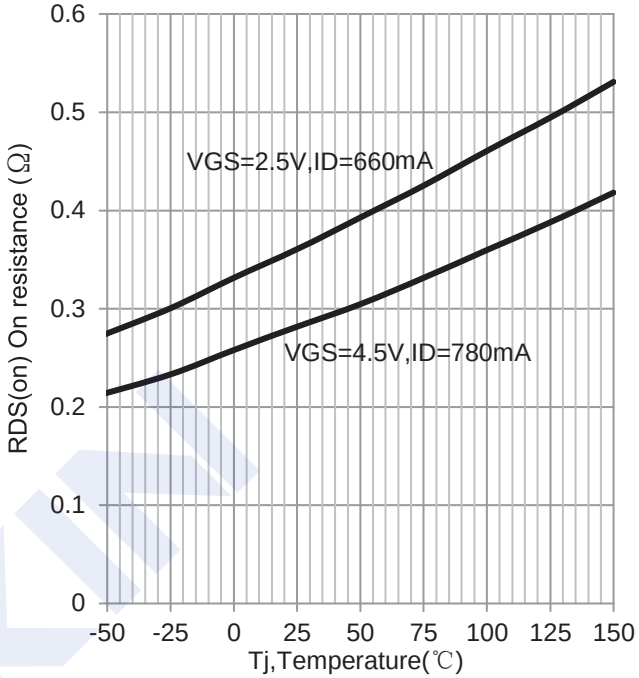
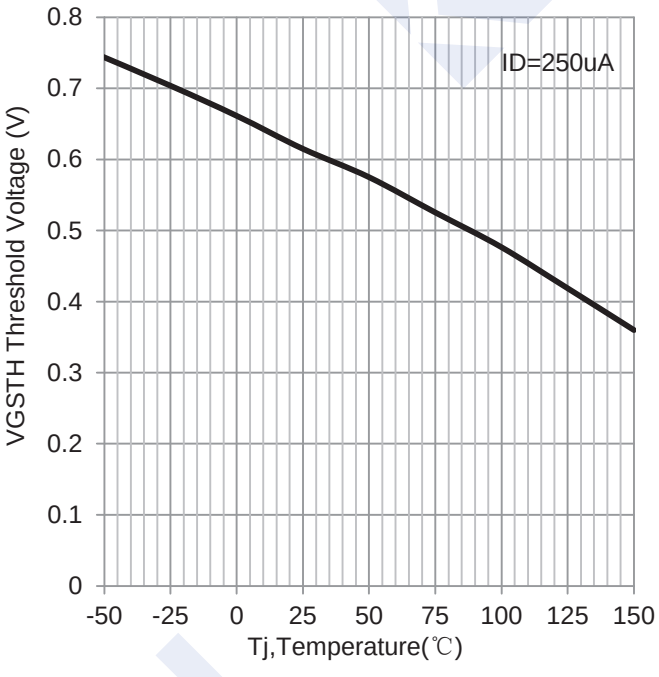


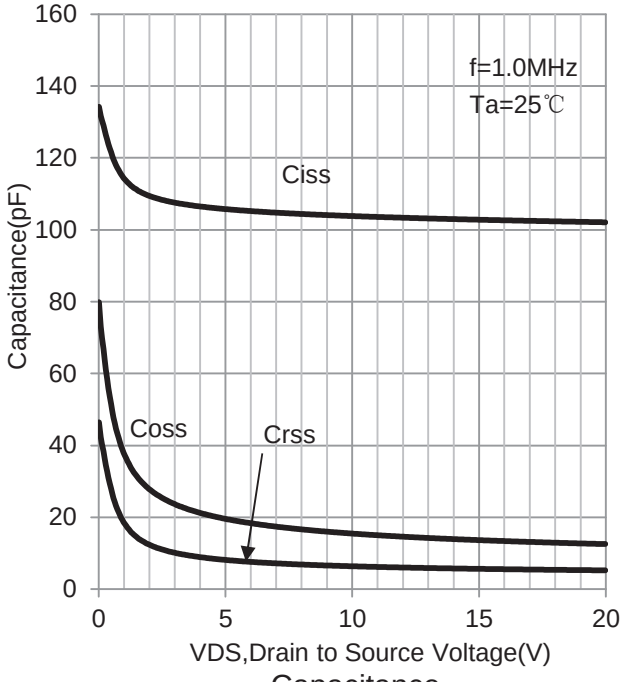
RDS(on) vs. VGS



RDS(on) vs Tj



VGSTH vs. Tj



Capacitance

P-Channel MOSFET

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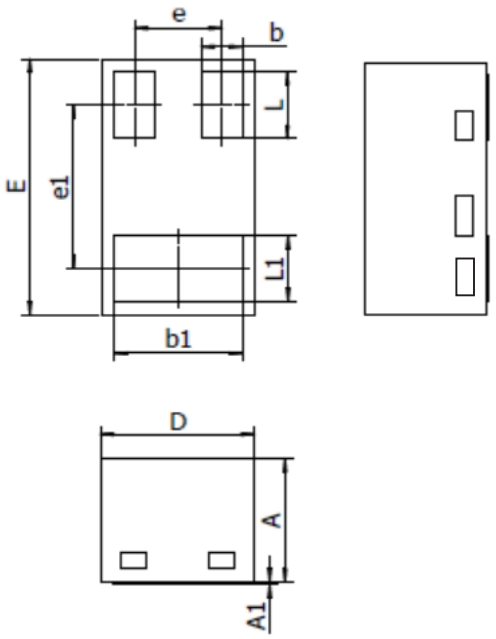
■ SOT883**(DFN1006-3)** Package Outline Dimensions



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.46	0.50	0.018	0.020
A1	---	0.03	---	0.001
D	0.55	0.65	0.022	0.026
E	0.95	1.05	0.037	0.041
b	0.12	0.22	0.005	0.008
b1	0.45	0.55	0.018	0.022
L	0.22	0.32	0.008	0.013
L1	0.22	0.32	0.008	0.013
e	Typ. 0.34		Typ. 0.013	
e1	Typ. 0.65		Typ. 0.026	

■ Typical Soldering Pattern (mm):