Elektronische Bauelemente

SWB2005E-C

-0.7A, -20V, $R_{DS(ON)}$ 400mΩ
P-Channel Enhancement MOSFET

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- Surface Mount Package
- N-Channel Switch with Low $R_{DS(ON)}$
- Fast Switching Speed
- ESD Protected Gate

APPLICATIONS

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics

MARKING

Top View

*Color Band Denotes Drain (Pin.3)

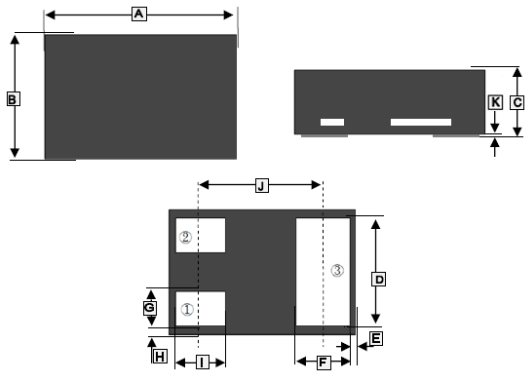
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-883B	10K	7 inch

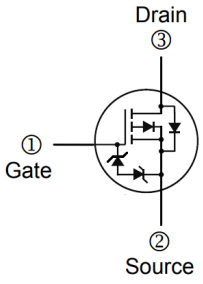
ORDER INFORMATION

Part Number	Type
SWB2005E-C	Lead (Pb)-free and Halogen-free

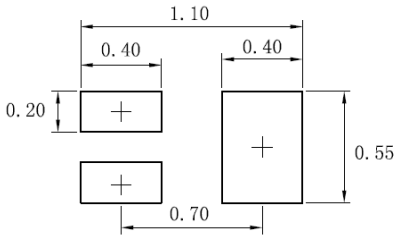
SOT-883B



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.95	1.05	G	0.10	0.20
B	0.55	0.65	H	0.055 TYP.	
C	0.30	0.40	I	0.19	0.29
D	0.44	0.54	J	0.64 TYP.	
E	0.05 TYP.		K	0	0.05
F	0.22	0.32			



Mounting Pad Layout



*Dimensions in millimeters

MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±8	V
Continuous Drain Current [1]	T_A=25℃	I_D	-0.7	A
	T_A=70℃		-0.6	
Pulsed Drain Current [2]		I_{DM}	-2	A
Total Power Dissipation [1]		P_D	350	mW
Operating Junction & Storage Temperature Range		T_J, T_{STG}	150, -55~150	℃
Thermal Resistance Ratings				
Thermal Resistance from Junction-Ambient [1]		$R_{\theta JA}$	357	℃/W

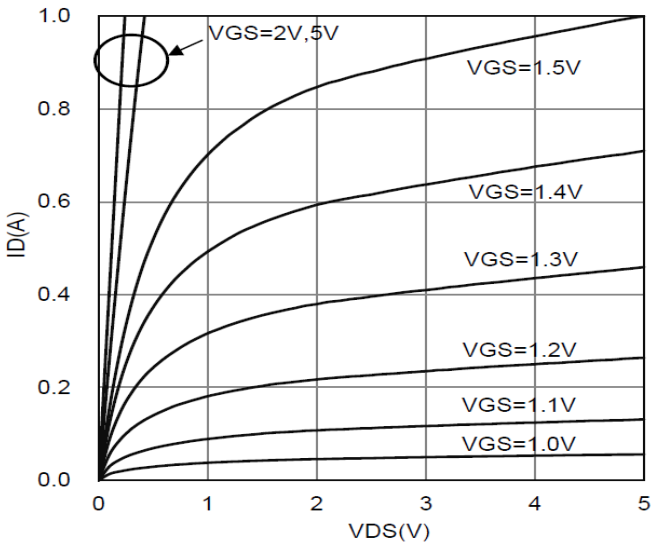
ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	-20	-	-	V	V_{GS}=0, I_D= -250μA
Gate Threshold Voltage	$V_{GS(th)}$	-0.4	-	-1	V	V_{DS}=V_{GS}, I_D= -250μA
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{DS}= -16V, V_{GS}=0
Gate-Body Leakage Current	I_{GSS}	-	-	±10	μA	V_{DS}=0, V_{GS}= ±8V
Drain-Source On-Resistance [3]	$R_{DS(ON)}$	-	-	400	mΩ	V_{GS}= -4.5V, I_D= -0.2A
		-	-	500		V_{GS}= -2.5V, I_D= -0.2A
		-	-	600		V_{GS}= -1.8V, I_D= -0.2A
Diode Forward Voltage [3]	V_{SD}	-	-	-1.5	V	I_S= -1A, V_{DS}=0
Total Gate Charge	Q_g	-	1.3	-	nC	V_{DS}= -16V V_{GS}= -4.5V I_D= -200mA
Gate-Source Charge	Q_{gs}	-	0.15	-		
Gate-Drain Charge	Q_{gd}	-	0.53	-		
Turn-on Delay Time	$T_{d(on)}$	-	26	-	nS	V_{DD}= -10V V_{GS}= -5V R_G=10Ω R_L=50Ω I_D= -200mA
Rise Time	T_r	-	66	-		
Turn-off Delay Time	$T_{d(off)}$	-	82	-		
Fall Time	T_f	-	280	-		
Input Capacitance	C_{iss}	-	53	-	pF	V_{DS}= -16V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	9.8	-		
Reverse Transfer Capacitance	C_{rss}	-	6.3	-		

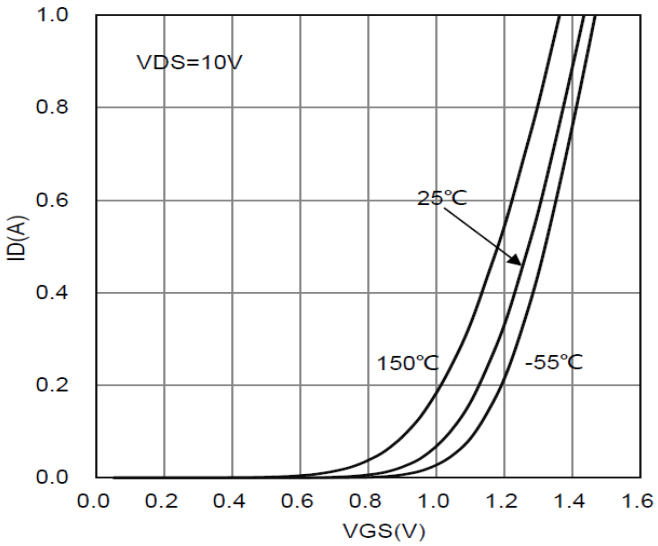
Notes:
1. Surface mounted on FR-4 board using the minimum recommended pad size.
2. Pulse width limited by maximum junction temperature.
3. Pulse Test: pulse width≦300μs, duty cycle≦2%.

CHARACTERISTIC CURVES

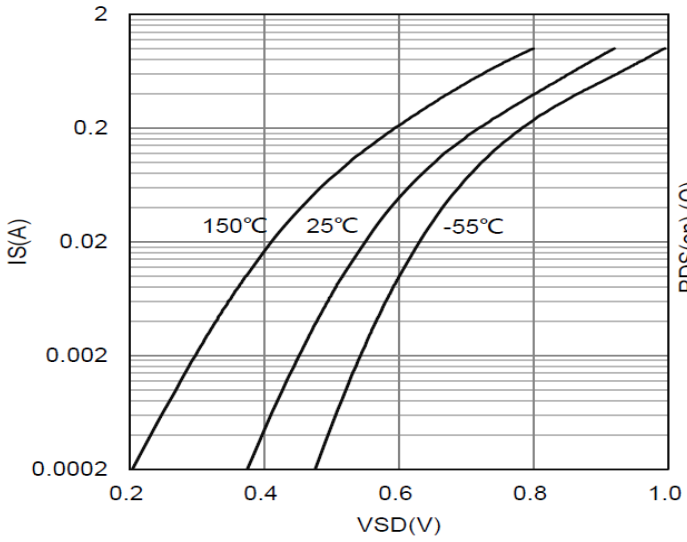
ID vs. VDS



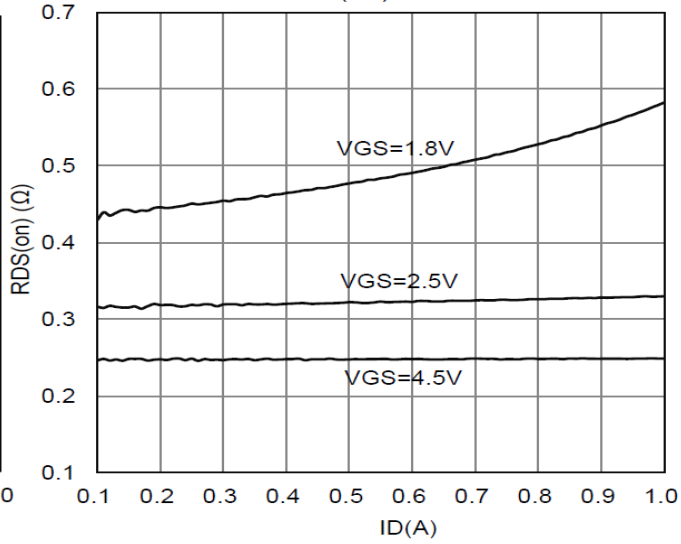
ID vs. VGS



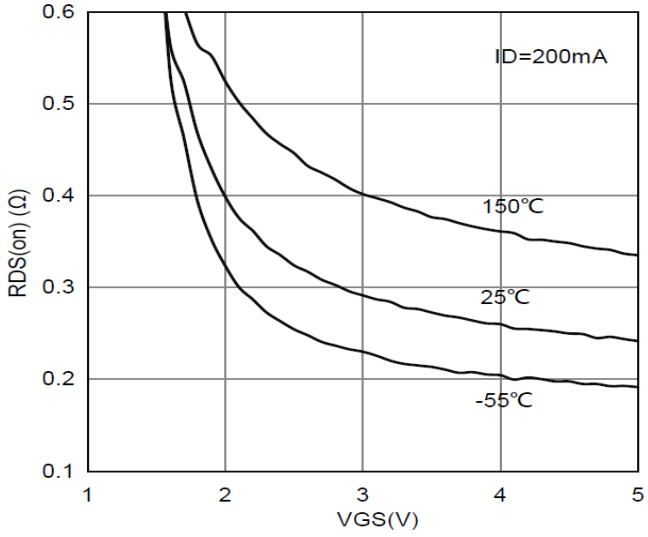
IS vs. VSD



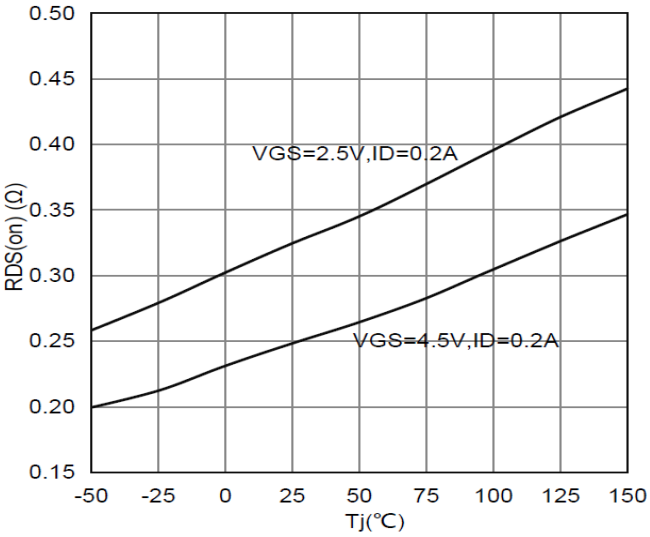
RDS(on) vs. ID



RDS(on) vs. VGS



RDS(on) vs. Tj



CHARACTERISTIC CURVES