General Description

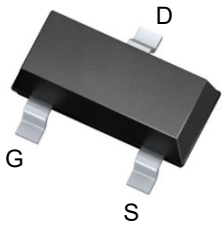
The MY035DPBF uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a Battery protection or in other Switching application.

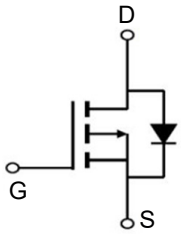
Features

V_{DSS}	-30	V
I_D	-7.9	A
$R_{DS(ON)}$(atV_{GS}=-10V)	35	mΩ
$R_{DS(ON)}$(atV_{GS}=-4.5V)	60	mΩ

Application

- Battery protection
- Load switch
- Uninterruptible power supply





Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY035DPBF	SOT-23	MY035DPBF	3000

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage (V_{GS}=0V)	-30	V
V_{GS}	Gate-Source Voltage (V_{DS}=0V)	±20	V
I_D	Drain Current-Continuous(T_C=25℃)	-7.9	A
	Drain Current-Continuous(T_C=100℃)	-9	A
$I_{DM\ (pluse)}$	Drain Current-Continuous@ Current-Pulsed (Note 1)	-30	A
P_D	Maximum Power Dissipation(T_C=25℃)	1.4	W
	Maximum Power Dissipation(T_C=100℃)	19	W
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 To 175	℃
R_{JC}	Thermal Resistance,Junction-to-Case	125	℃/W

Electrical Characteristics (T_A=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V I_D=-250μA	-30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-30V,V_{GS}=0V			-1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±12V,V_{DS}=0V			±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250μA	-1	-1.5	-2.5	V
g_{FS}	Forward Transconductance	V_{DS}=-10V,I_D=-4.2A		25		S
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=-10V, I_D=-4.2A		35	55	mΩ
		V_{GS}=-4.5V, I_D=-2.5A		60	85	mΩ
C_{iss}	Input Capacitance	V_{DS}=-10V,V_{GS}=0V, f=1.0MHz		520		pF
C_{oss}	Output Capacitance			100		pF
C_{rss}	Reverse Transfer Capacitance			65		pF
$t_{d(on)}$	Turn-on Delay Time	V_{GS}=-10V, V_{DS}=-20V, R_L=1.6,R_{GEN}=3		5		nS
t_r	Turn-on Rise Time			12		nS
$t_{d(off)}$	Turn-Off Delay Time			20		nS
t_f	Turn-Off Fall Time			4.5		nS
Q_g	Total Gate Charge	V_{GS}=-10V, V_{DS}=-15V, I_D=-3A		5.9		nC
Q_{gs}	Gate-Source Charge			2.8		nC
Q_{gd}	Gate-Drain Charge			1		nC
I_{SD}	Source-Drain Current(Body Diode)				-7.9	A
V_{SD}	Forward on Voltage	V_{GS}=0V,I_S=-20A			-1.2	V

Notes 1.Repetitive Rating: Pulse width limited by maximum junction temperature

Typical Electrical and Thermal Characteristics

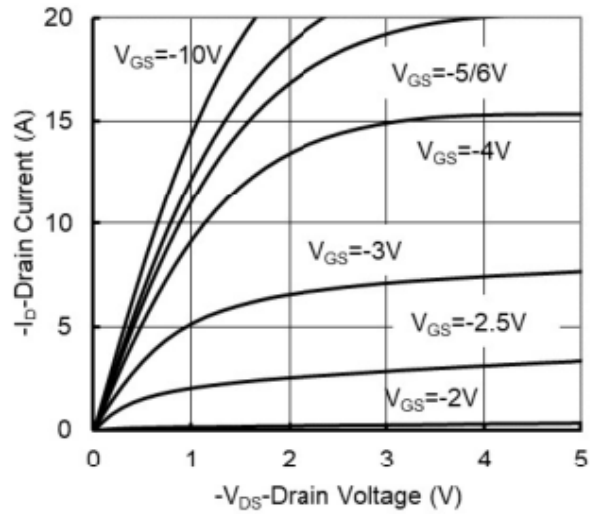


Figure1. Output Characteristics

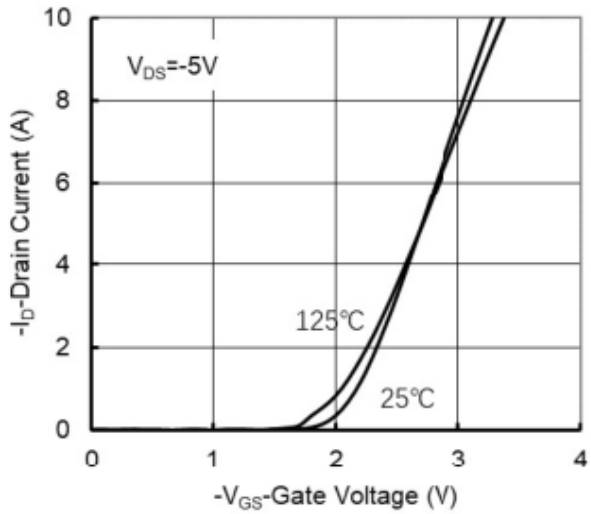


Figure2. Transfer Characteristics

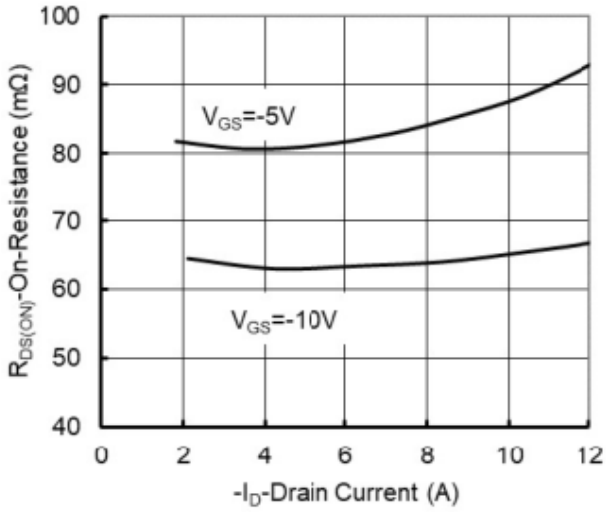


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

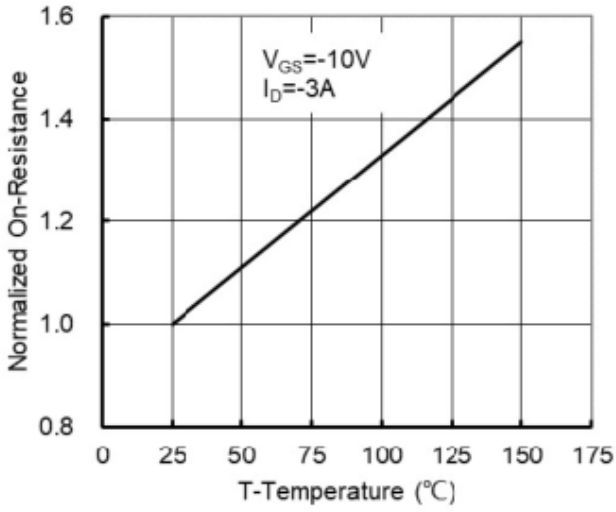


Figure 4: On-Resistance vs. Junction Temperature

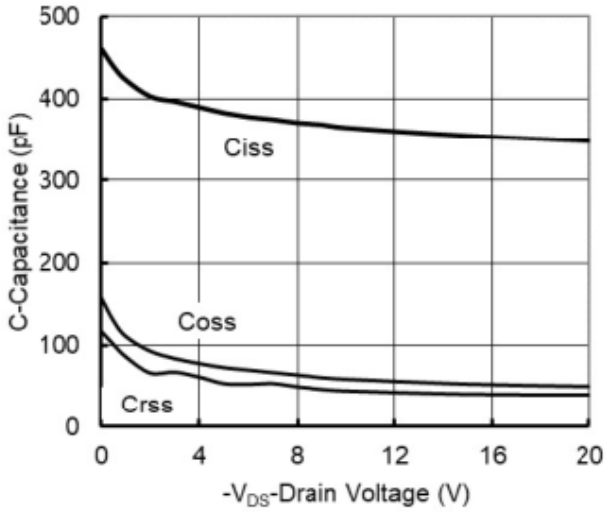


Figure5. Capacitance Characteristics

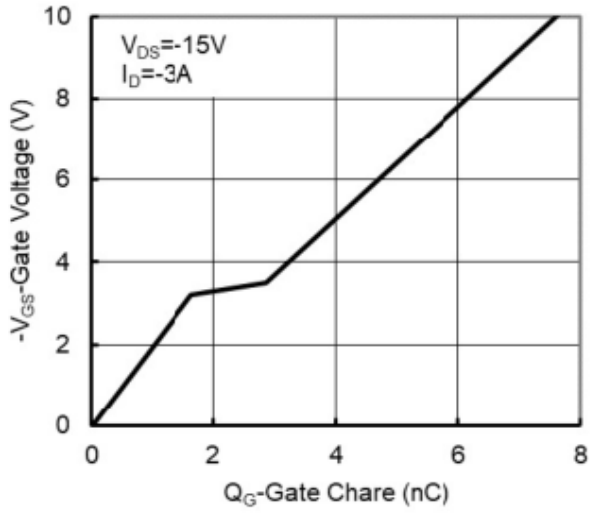


Figure6. Gate Charge

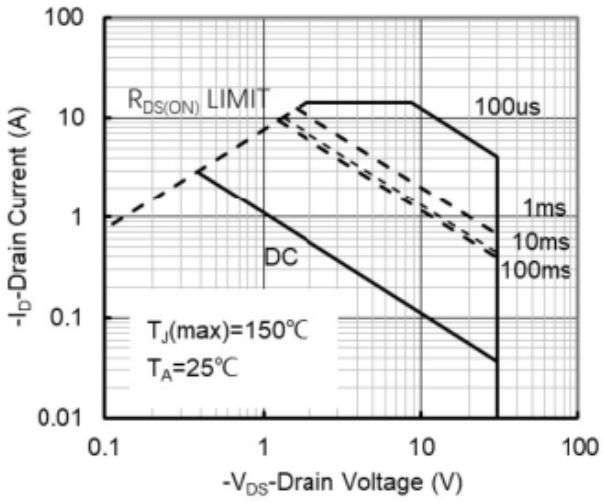


Figure7. Safe Operation Area

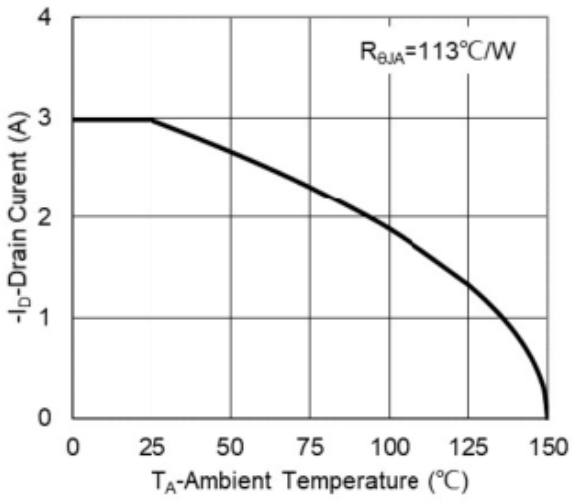
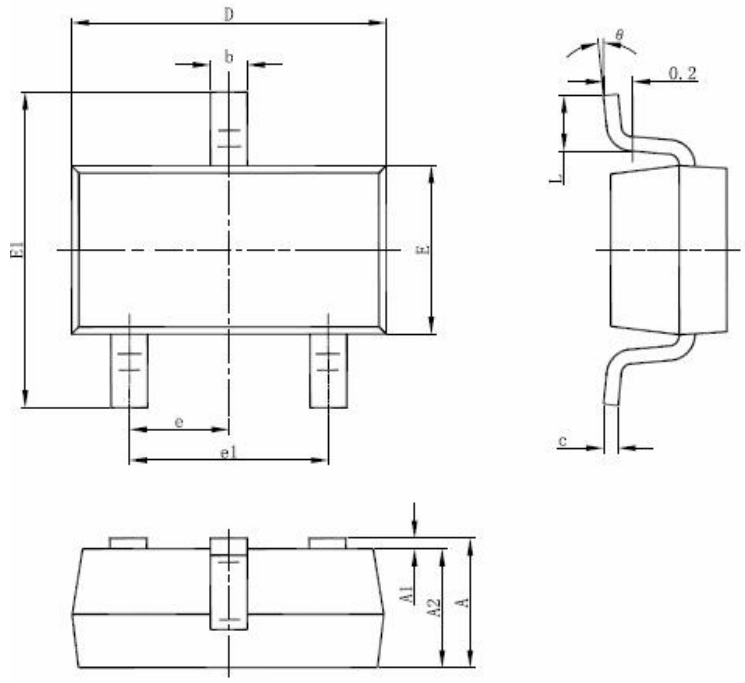


Figure8. Maximum Continuous Drain Current vs Ambient Temperature

Package Mechanical Data-SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°