

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.

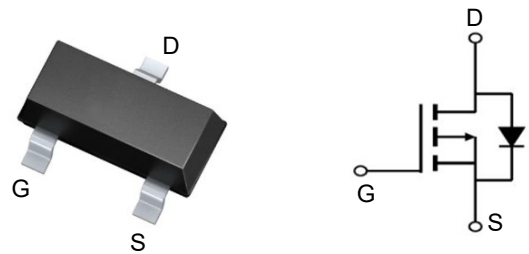


Features

V_{DSS}	-30	V
I_D	-7.9	A
$R_{DS(ON)}$ (at $V_{GS} = -10V$)	35	$m\Omega$
$R_{DS(ON)}$ (at $V_{GS} = -4.5V$)	60	$m\Omega$

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 ($T_A=25^{\circ}C$ 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($T_c=25^{\circ}C$)	-7.9	A
	Drain Current-Continuous($T_c=100^{\circ}C$)	-9	A
$I_{DM(pluse)}$	Drain Current-Continuous@ Current-Pulsed (Note 1)	-30	A
P_D	Maximum Power Dissipation($T_c=25^{\circ}C$)	1.4	W
	Maximum Power Dissipation($T_c=100^{\circ}C$)	19	W
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 175	$^{\circ}C$
R_{JC}	Thermal Resistance,Junction-to-Case	125	$^{\circ}C/W$

Electrical Characteristics ($T_A=25\text{ }^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-30V, V_{GS}=0V$			-1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 12V, V_{DS}=0V$			± 100	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-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	m Ω
		$V_{GS}=-4.5V, I_D=-2.5A$		60	85	m Ω
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

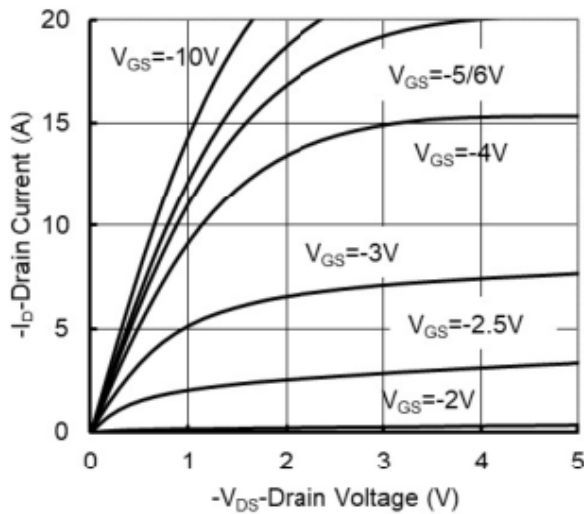


Figure1. Output Characteristics

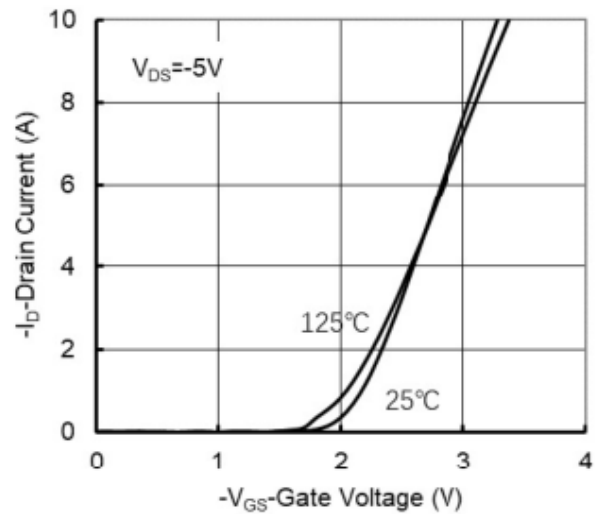


Figure2. Transfer Characteristics

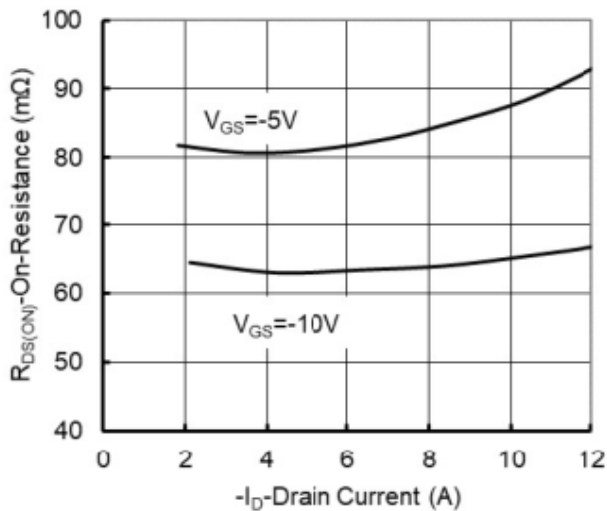


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

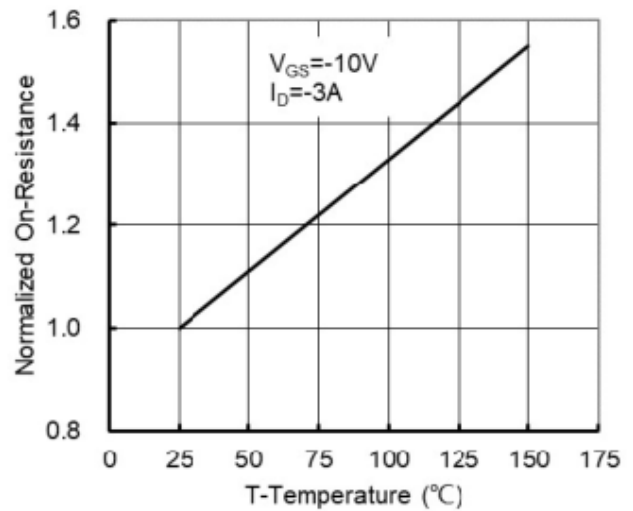


Figure 4: On-Resistance vs. Junction Temperature

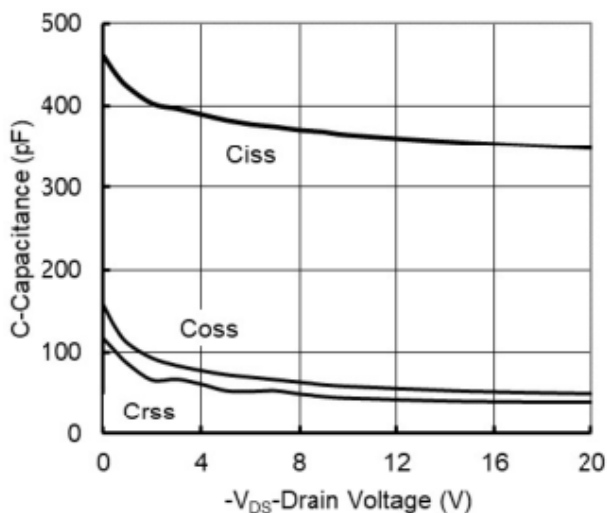


Figure5. Capacitance Characteristics

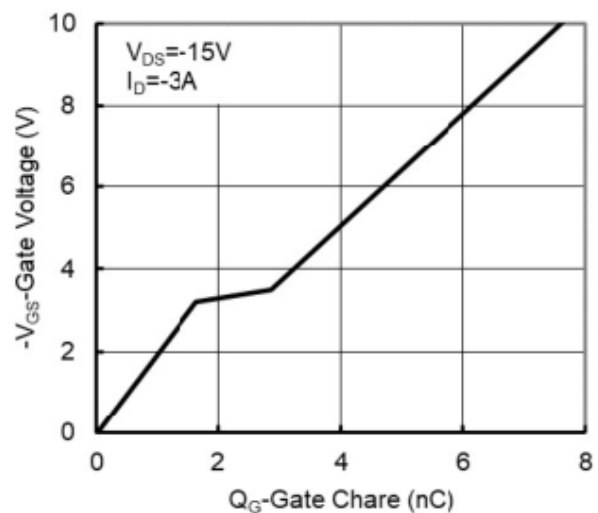


Figure6. Gate Charge

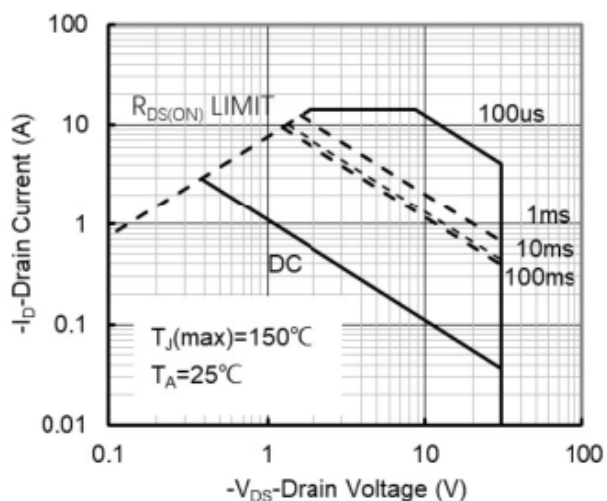


Figure7. Safe Operation Area

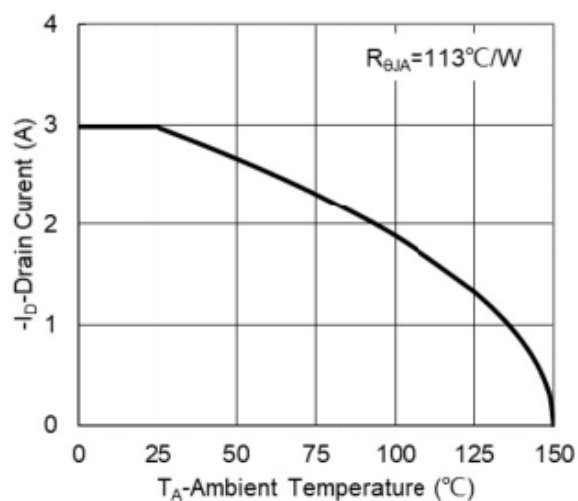
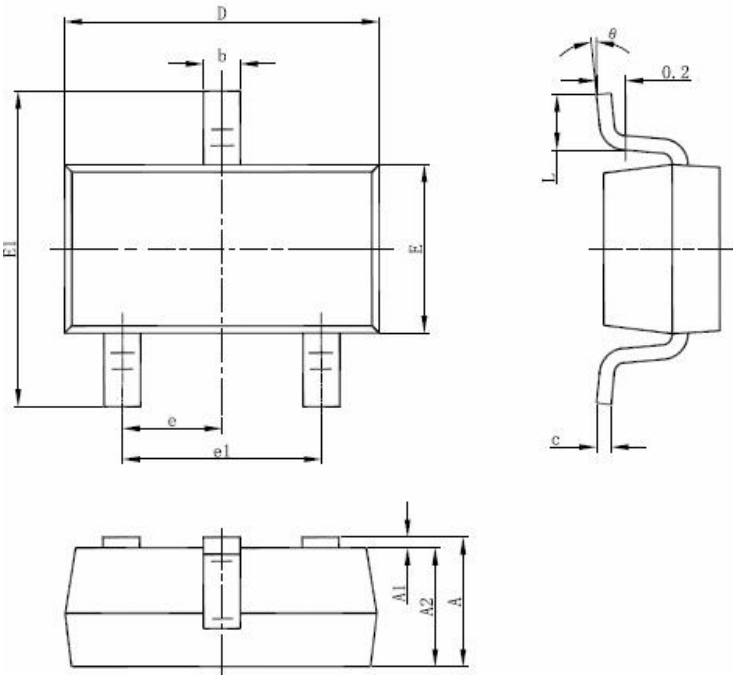


Figure8. Maximum Continuous Drain Current vs Ambient Temperature

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°