

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.

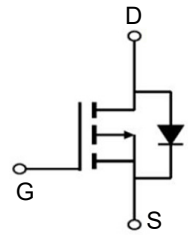
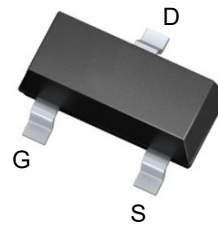


Features

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

Electrical Characteristics (T_A=25 °C, 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

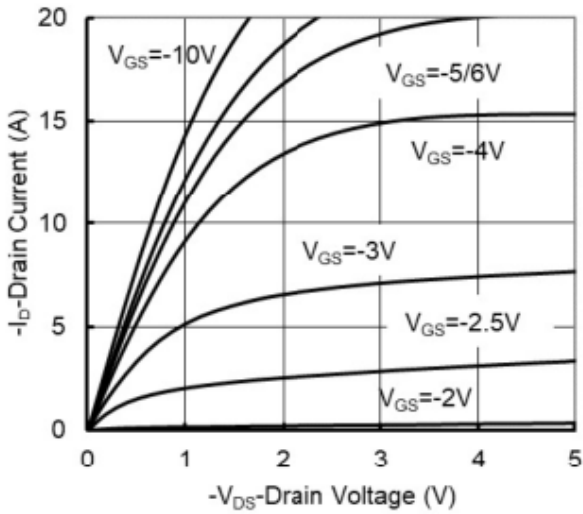


Figure1. Output Characteristics

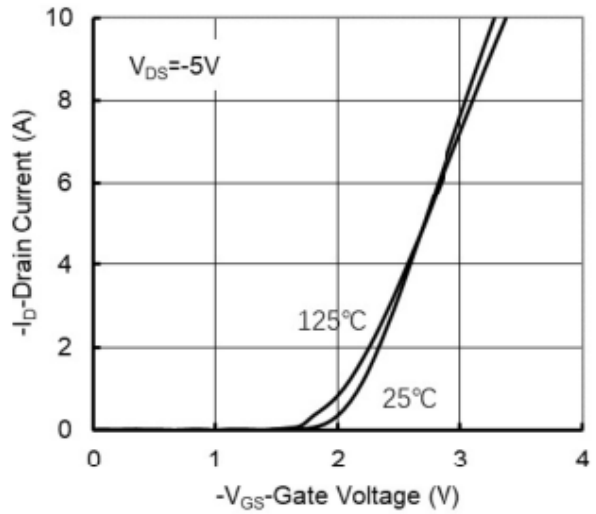


Figure2. Transfer Characteristics

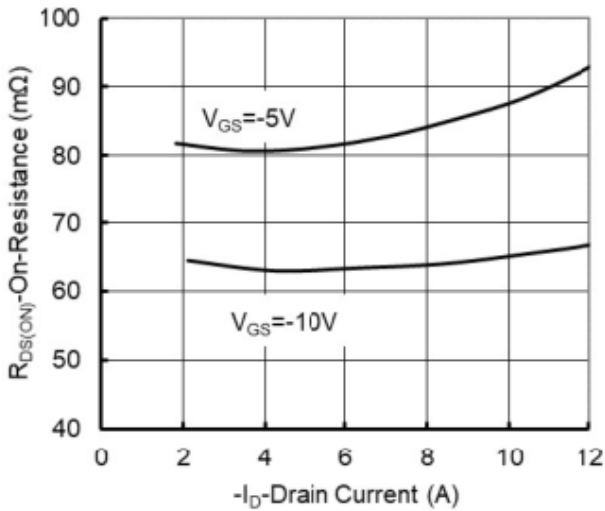


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

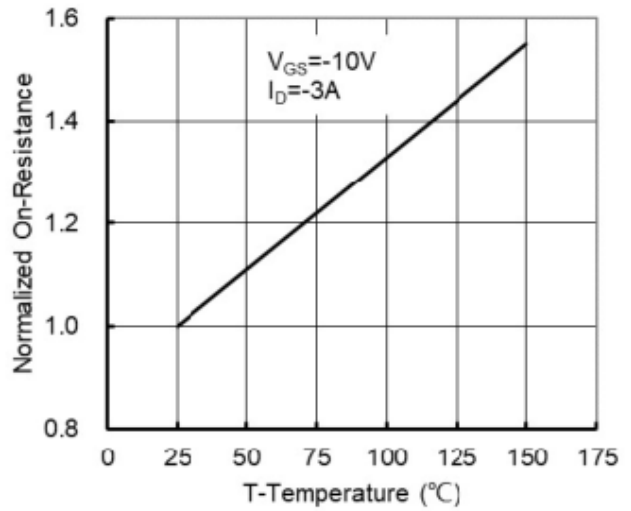


Figure 4: On-Resistance vs. Junction Temperature

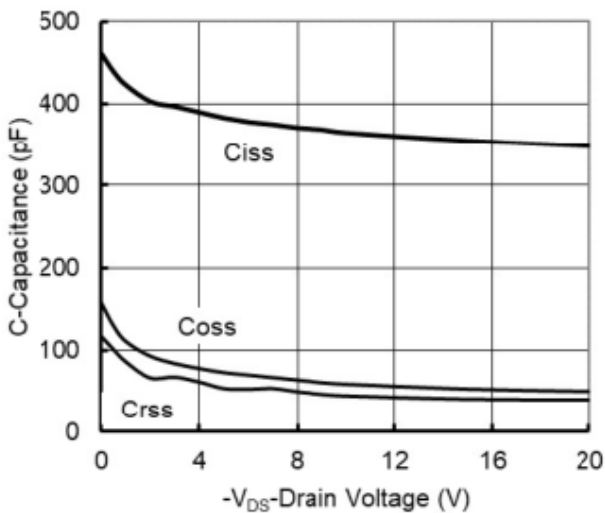


Figure5. Capacitance Characteristics

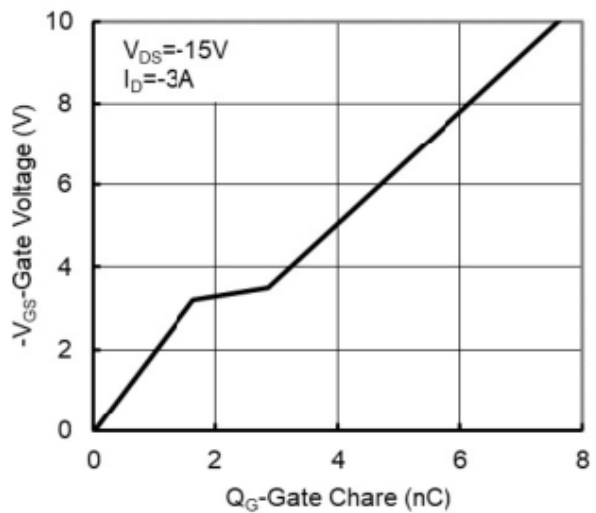


Figure6. Gate Charge

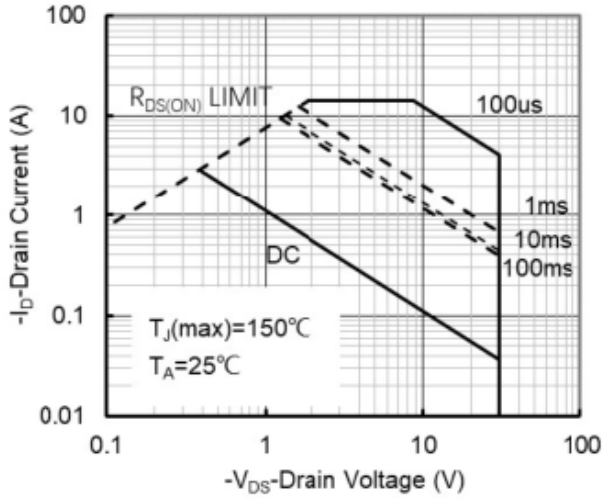


Figure7. Safe Operation Area

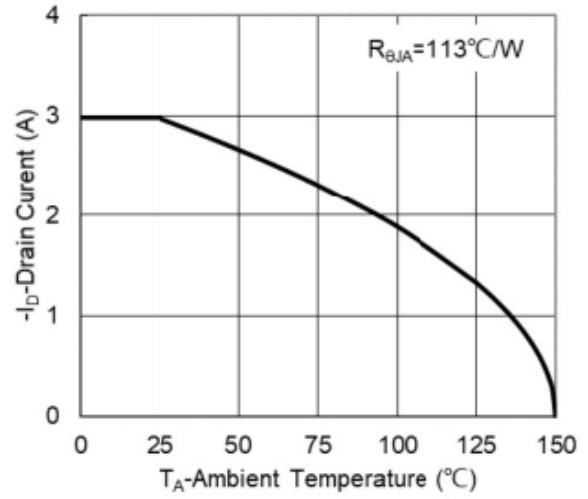
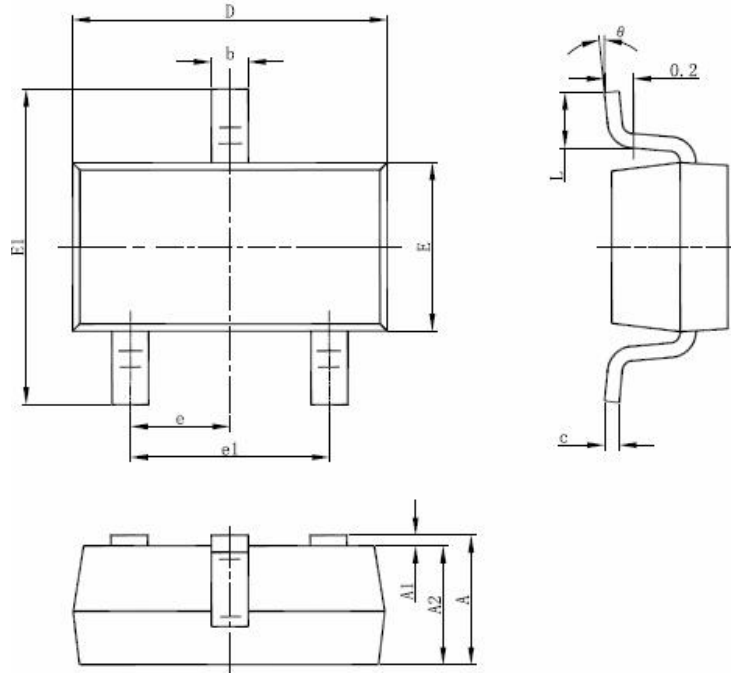


Figure8. Maximum Continuous Drain Current vs Ambient Temperature

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°