



N-Channel Enhancement Mode MOSFET

GENERAL DESCRIPTION

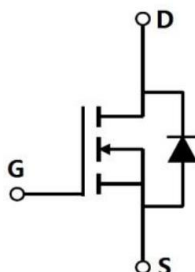
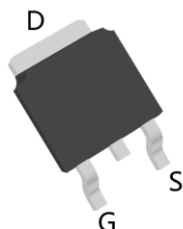
PW60N10 use advanced SGT MOSFET technology to provide low $R_{DS(ON)}$, low gate charge, fast switching and excellent avalanche characteristics. This device is specially designed to get better ruggedness and suitable to use in.

FEATURES

Low $R_{DS(on)}$ & FOM
Extremely low switching loss
Excellent stability and uniformity or Invertors

Application

Consumer electronic power supply
Motor control
Synchronous-rectification
Isolated DC
Synchronous-rectification applications



Absolute Maximum Ratings (TC=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain source voltage	VDS	100	V
Gate source voltage	VGS	±20	V
Continuous drain current (1) , TC=25 °C	ID	60	A
Pulsed drain current (2) , TC=25 °C	ID, pulse	180	A
Power dissipation3), TC=25 °C	PD	125	W
Single pulsed avalanche energy (5)	EAS	100	mJ
Operation and storage temperature	Tstg, Tj	-55 to 150	°C
Thermal resistance, junction-case	RθJC	1	°C/W
Thermal resistance, junction-ambient (4)	RθJA	62	°C/W

**Electrical Characteristics (T_J=25 °C, unless otherwise noted)**

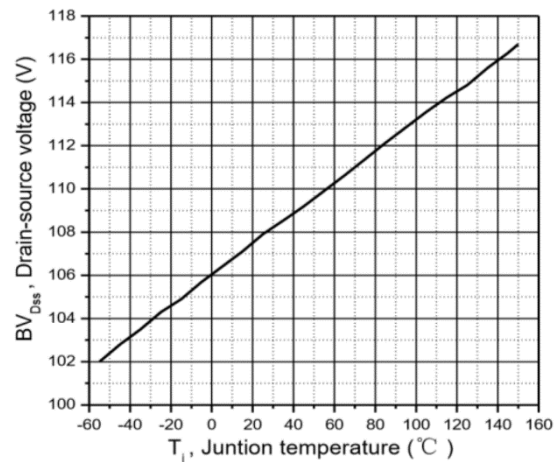
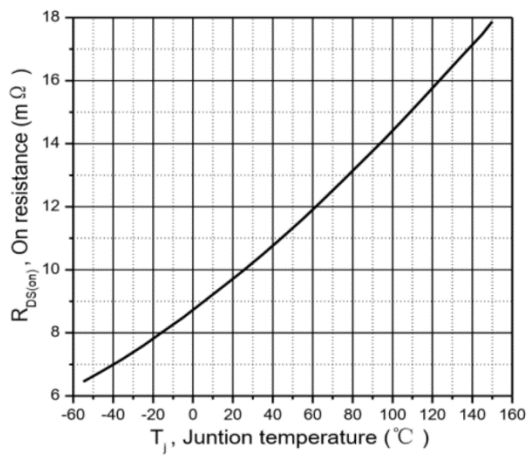
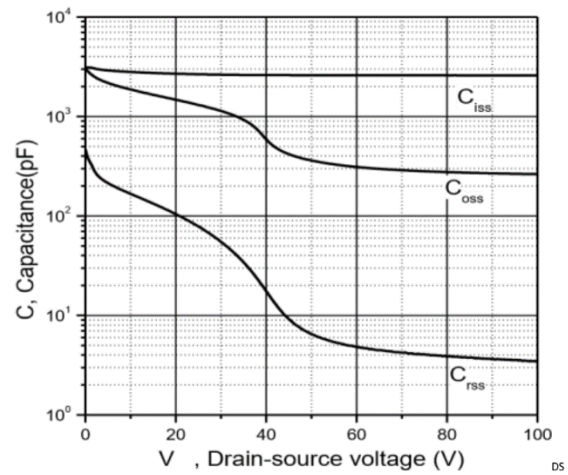
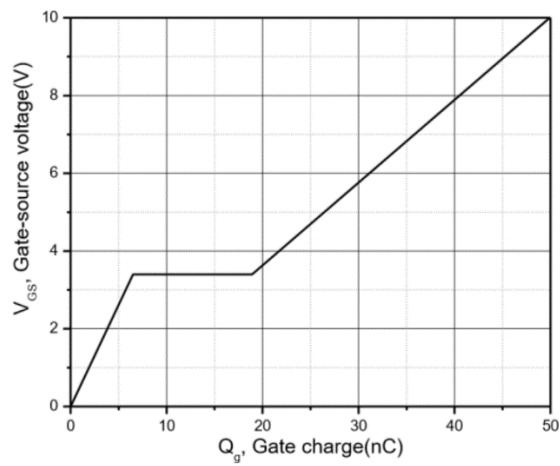
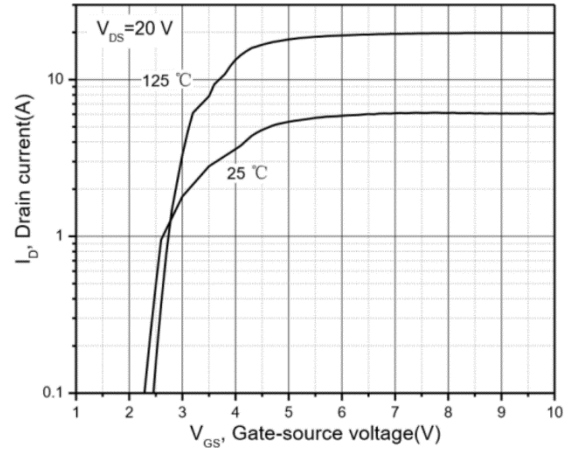
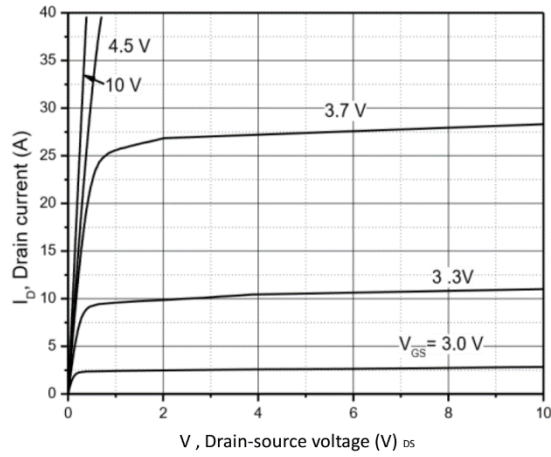
Paramete	Symbol	Test	Min.	Typ.	Max.	Unit
Drain-source breakdown voltage	BVDSS	VGS=0V, ID=250 μA	100			V
Gate threshold voltage	VGS(th)	VDS=VGS, ID=250 μA	1.0		2.5	V
Drain-source on-state resistance	RDS(ON)	VGS=10 V, ID=10 A		8	10	mΩ
Drain-source on-state resistance	RDS(ON)	VGS=4.5V, ID=10 A		10	12	mΩ
Gate-source leakage current	IGSS	VGS=20V			100	nA
		VGS=-20V			-100	
Drain-source leakage current	IDSS	VDS=100V, VGS=0 V			1	μA
Input capacitance	Ciss	VGS=0V, VDS=50 V, f=1MHz		2604		pF
Output capacitance	Coss			361.2		pF
Reverse transfer capacitance	Crss			6.5		pF
Turn-on delay time	td(on)	VGS=10V, VDS=50 V, RG=2.2 Ω, ID=25 A		20.6		ns
Rise time	tr			5		ns
Turn-off delay time	td(off)			51.8		ns
Fall time	tf			9		ns
Total gate charge	Qg	ID=25 A, VDS=50 V, VGS=10 V		49.9		nC
Gate-source charge	Qgs			6.5		nC
Gate-drain charge	Qgd			12.4		nC
Gate plateau voltage	Vplateau			3.4		V
Diode forward current	IS	VGS<Vth			60	
Pulsed source current	ISP				180	A
Diode forward voltage	VSD	IS=12 A, VGS=0 V			1.3	V
Reverse recovery time	trr	IS=12 A, di/dt=100 A/μs		60.4		ns
Reverse recovery charge	Qrr			106.1		nC
Peak reverse recovery current	Irrm			3		A

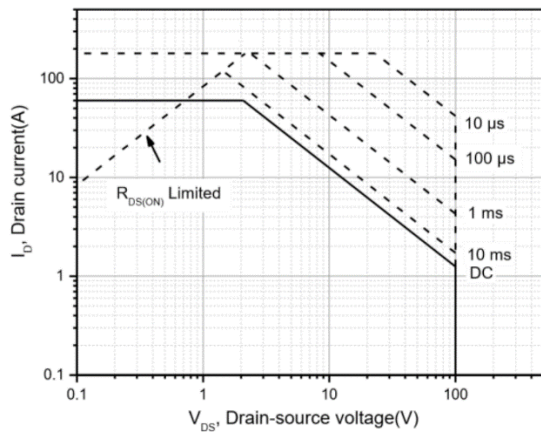
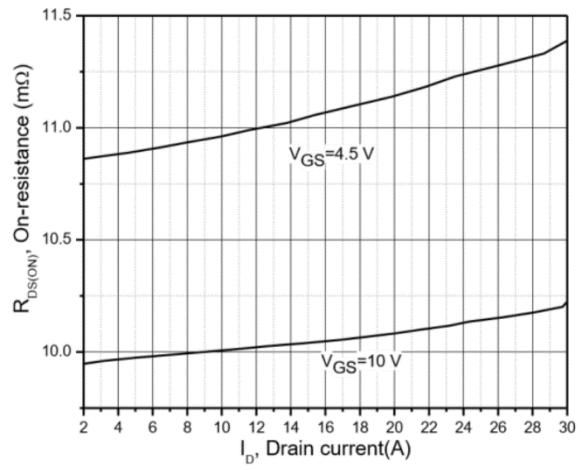
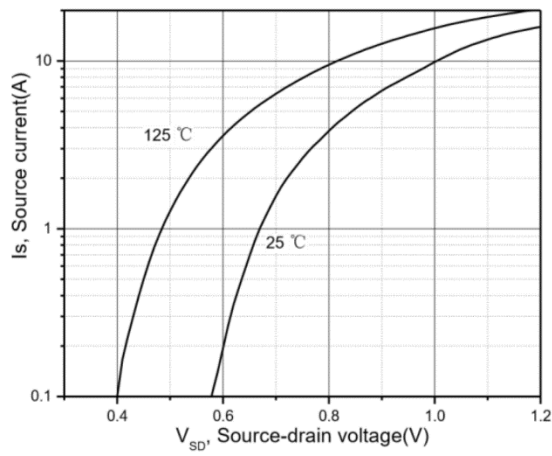
Note :

- 1、 The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2、 The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3、 The EAS data shows Max. rating . The test condition is VDD=25V, VGS=10V, L=0.1mH, IAS=15A
- 4、 The power dissipation is limited by 175°C junction temperature
- 5、 The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.



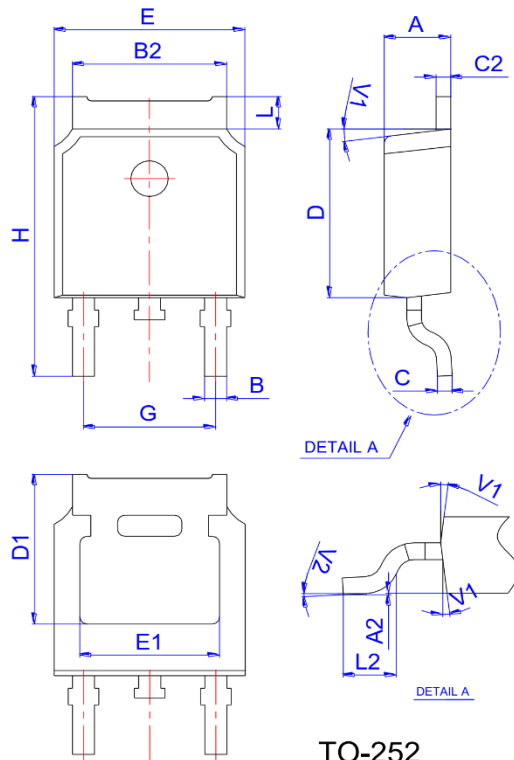
Typical Characteristics





Package

TO252



TO-252

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

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