HBSS1237F

N-Channel Enhancement Mode MOSFET

Description

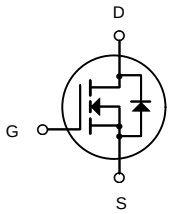
The HBSS1237F uses advanced trench technology to provide excellent $R_{DS(ON)}$, This device is suitable for use as a load switch or in PWM applications.

SOT-23

General Features

V_{DS} =100V,I_D =0.17A

$R_{DS(ON)}$ < 6 Ω @ V_{GS}=10V



N-Channel MOSFET

Application

Battery protection

Load switch

Uninterruptible power supply

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
HBSS1237F	SOT-23	SA	3000

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

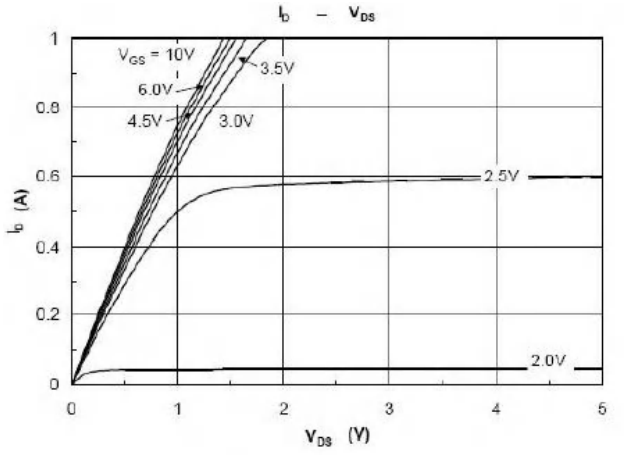
Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Drain Current-Continuous	0.17	A
I_{DM}	Drain Current-Pulsed	0.68	A
P_D	Maximum Power Dissipation	0.35	W
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	℃
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient	350	℃/W

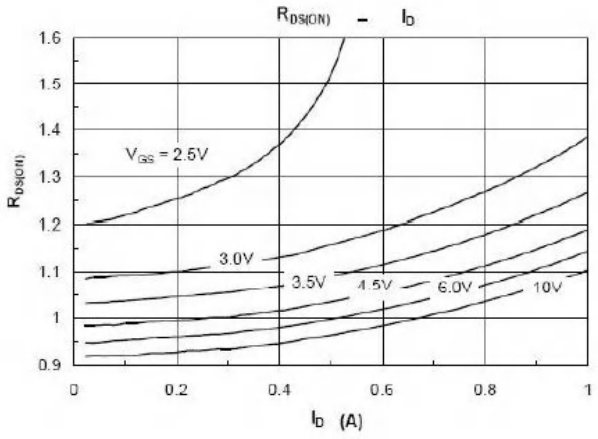
Electrical Characteristics (T_A=25°C unless otherwise noted)

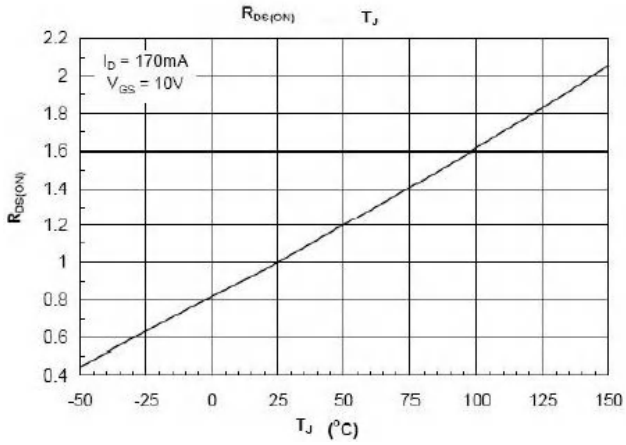
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-source breakdown voltage	V_{GS}=0, I_D=250μA	100			V
$V_{GS(th)}$	Gate threshold voltage	V_{DS}=V_{GS}, I_D=250μA	1.5		2.5	V
I_{GSS}	Gate-body leakage current	V_{DS}=0, V_{GS}=±20V			±10	μA
I_{DSS}	Zero gate voltage drain current	V_{DS}=100V, V_{GS}=0V			1	μA
$R_{DS(on)}$	Drain-source on-resistance[a]	V_{GS}=10V, I_D=0.17A			6.0	Ω
		V_{GS}=4.5V, I_D=0.17A			9.0	Ω
V_{SD}	Diode forward voltage	I_S=0.2A,V_{GS}=0V			1.0	V
Dynamic						
C_{iss}	Input capacitance	V_{DS}=50V, V_{GS}=0V, f=1MHz		30		pF
C_{oss}	Output capacitance			10		
C_{rss}	Reverse transfer capacitance[b]			7		
Switching[b]						
$t_{d(on)}$	Turn-on delay time	V_{GS}=10V,V_{DS}=50V I_D=200mA, R_{GEN}=6Ω		1.7		nS
t_r	Rise time			9		
$t_{d(off)}$	Turn-off delay time			17		
t_f	Fall time			7		

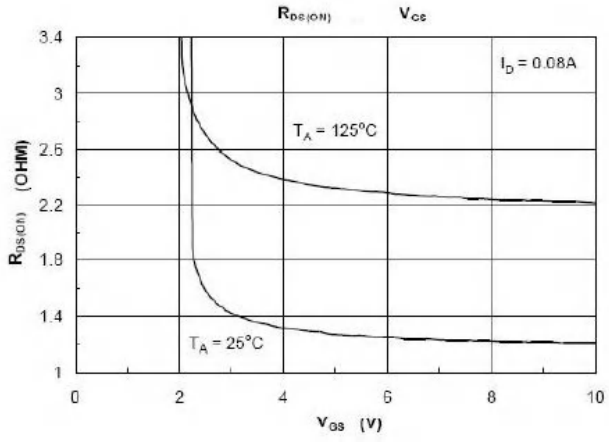
Notes :
a. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
b. Guaranteed by design, not subject to producting.

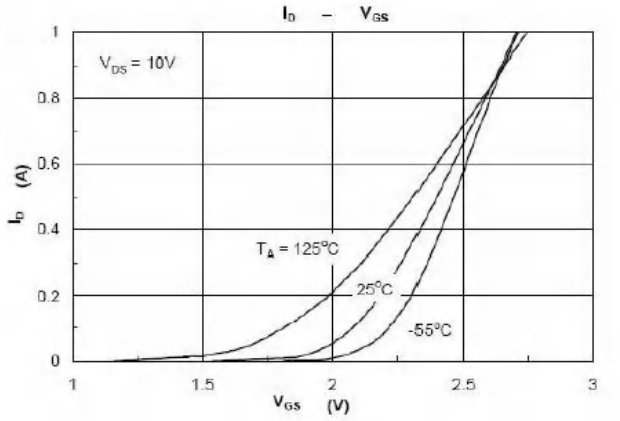
TypicalCharacteristics

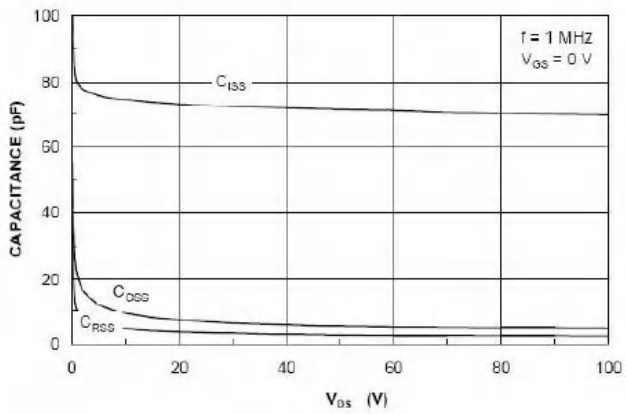


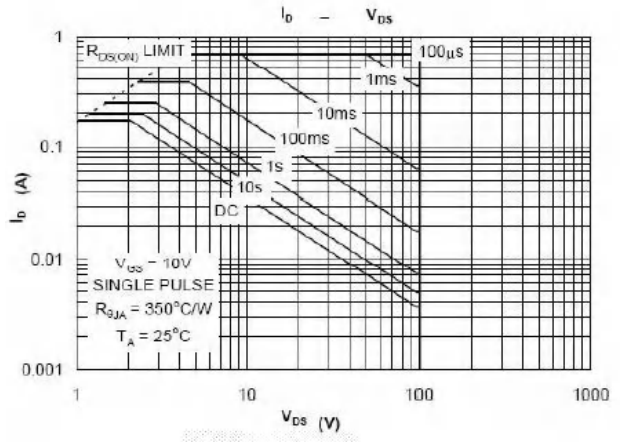


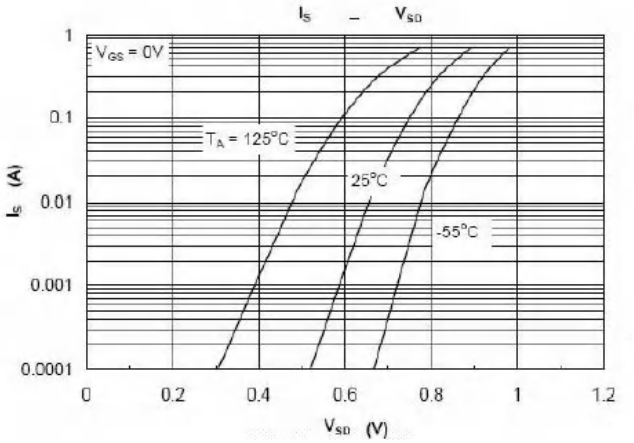




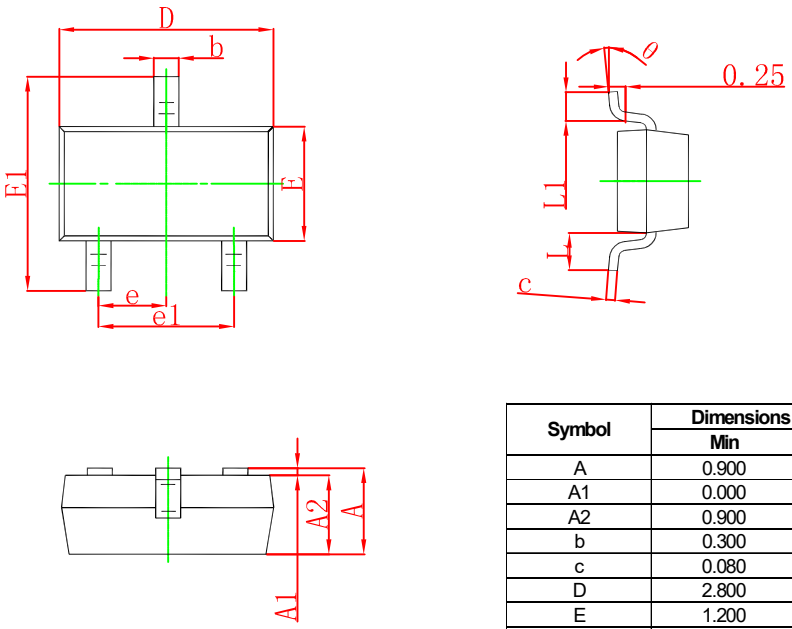

I_D – V_{GS}
V_{DS} = 10V
T_A = 125°C
25°C
-55°C
I_D (A)
V_{GS} (V)


f = 1 MHz
V_{GS} = 0 V
C_{ISS}
C_{OSS}
C_{RSS}
CAPACITANCE (pF)
V_{DS} (V)


I_D – V_{DS}
$R_{DS(ON)}$ LIMIT
100µs
1ms
10ms
100ms
1s
10s
DC
V_{GS} = 10V
SINGLE PULSE
$R_{\theta JA}$ = 350°C/W
T_A = 25°C
I_D (A)
V_{DS} (V)

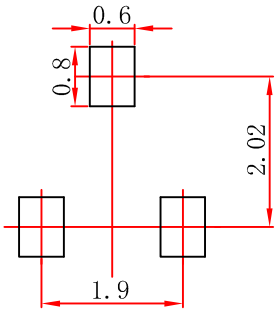

I_S – V_{SD}
V_{GS} = 0V
T_A = 125°C
25°C
-55°C
I_S (A)
V_{SD} (V)

SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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