

HBM2307S

30V P-Channel Enhancement
Mode MOSFET

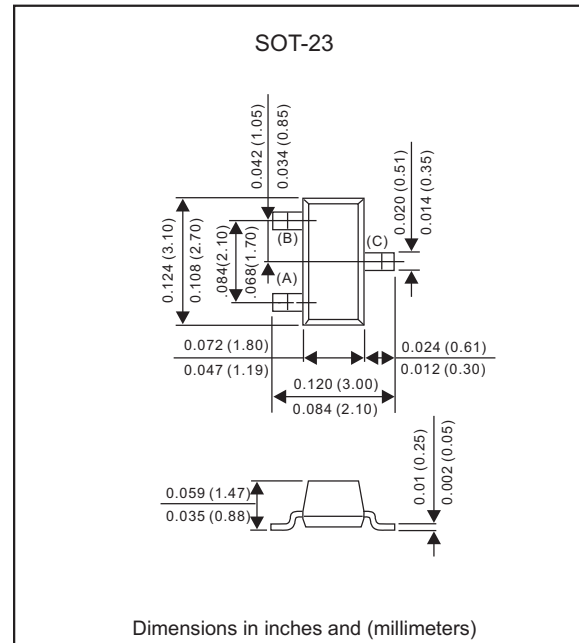
Package outline

Features

- $R_{DS(ON)} \leq 130m\Omega @ V_{GS} = -10V$
- $R_{DS(ON)} \leq 200m\Omega @ V_{GS} = -4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- In compliance with EU RoHS 2002/95/EC directives.
- Suffix "-H" indicates Halogen-free part, ex.HBM2307S-H.

Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.008 gram



Maximum ratings (AT $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	Limit	UNIT
Drain-source voltage		V_{DSS}	-30	V
Drain current-continue -pulsed	$T_A = 25^\circ\text{C}$	I_D	-2.0	A
	$T_A = 70^\circ\text{C}$		-1.6	
		I_{DM}	-8.0	
Gate- source voltage-continue		V_{GS}	± 20	V
Maximum power dissipation	$T_A = 25^\circ\text{C}$	P_D	0.78	W
	$T_A = 70^\circ\text{C}$		0.5	
Thermal resistance-junction to ambient*		$R_{\theta JA}$	Typical	$^\circ\text{C/W}$
			Maximum	
			110	160
Operation junction temperature		T_J	-55 to +150	$^\circ\text{C}$
Storage temperature		T_{STG}	-65 to +175	$^\circ\text{C}$

* The device mounted on 1in² FR4 board with 2 oz copper

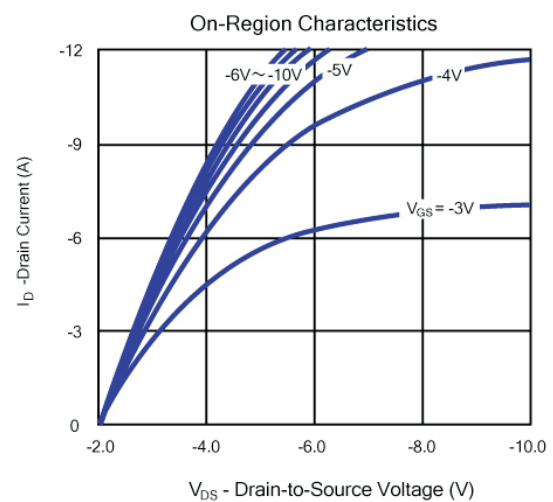
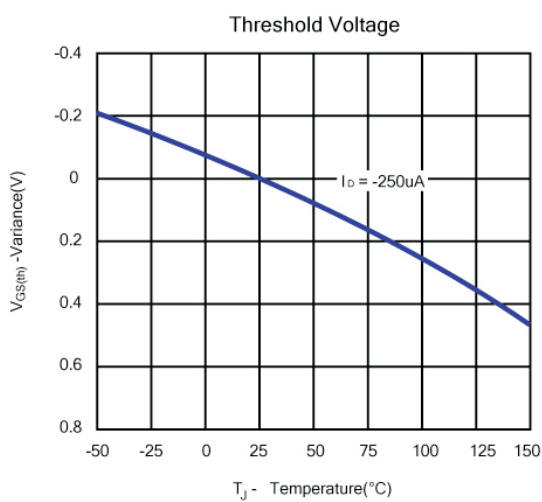
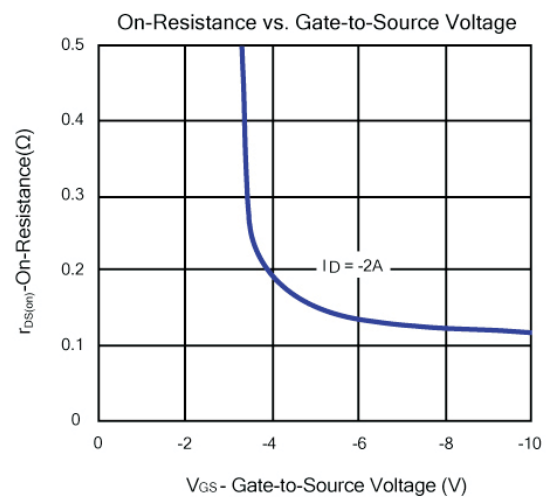
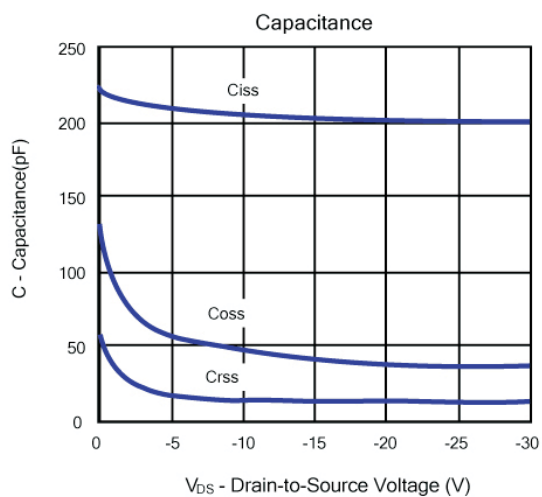
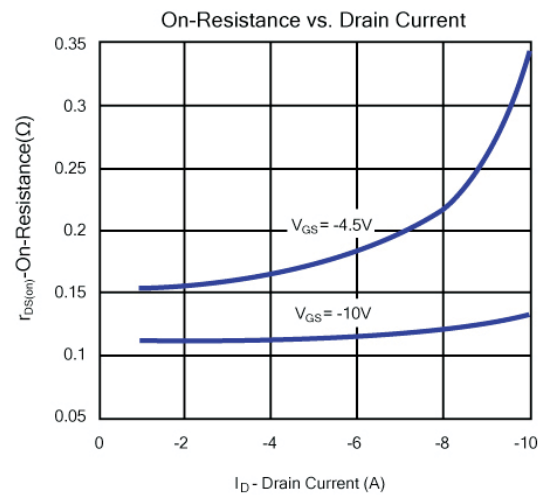
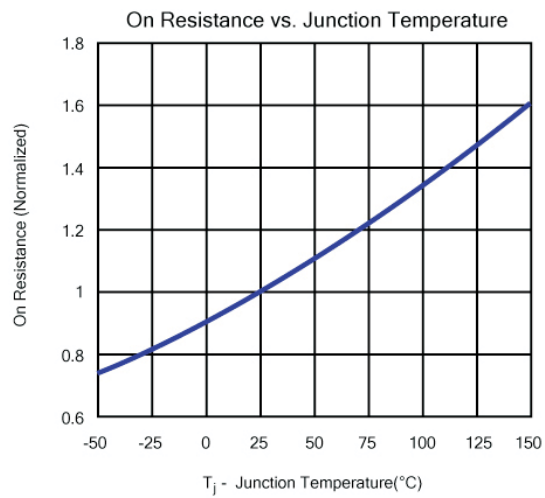
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Electrical characteristics (At $T_A=25^\circ\text{C}$ unless otherwise noted)

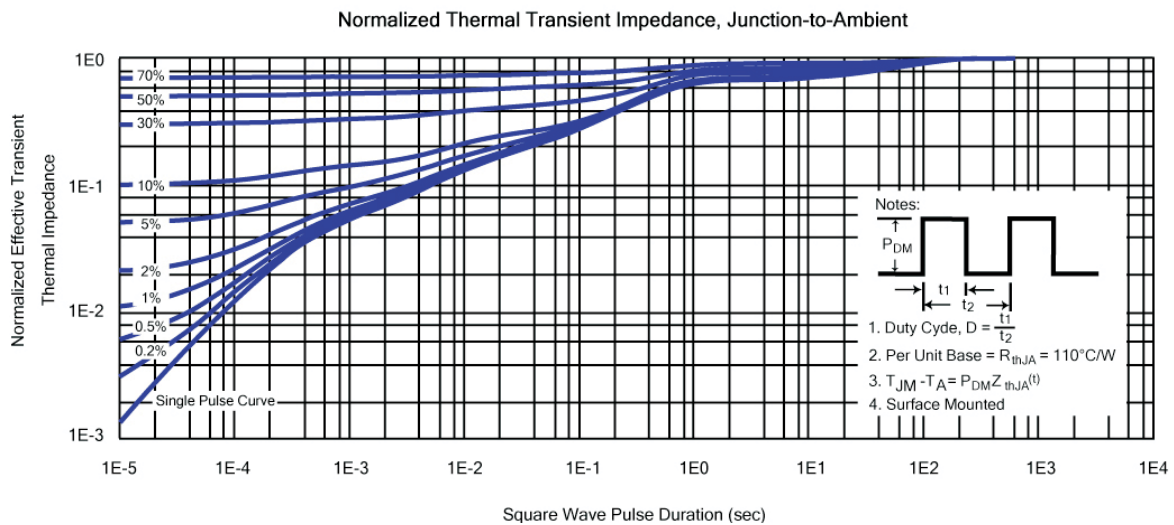
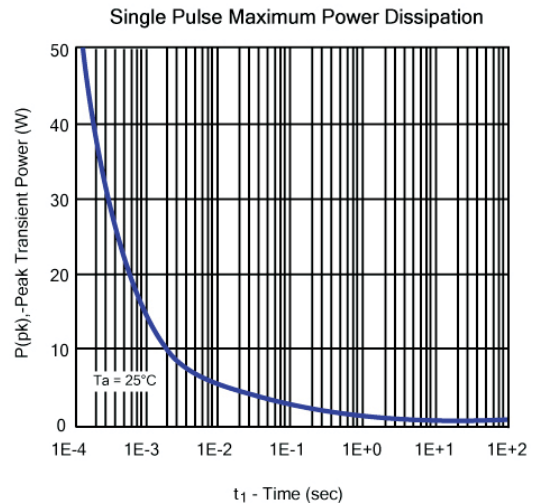
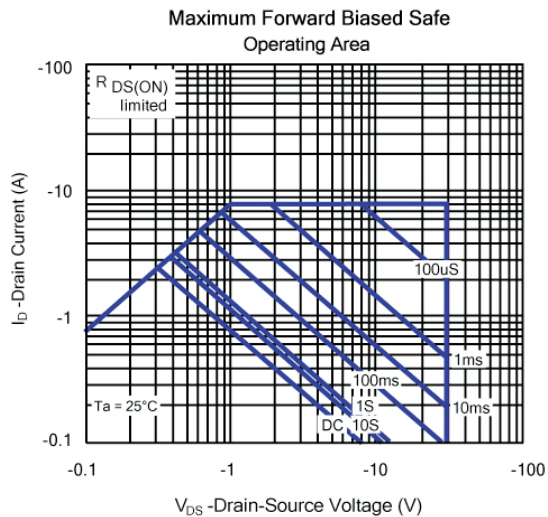
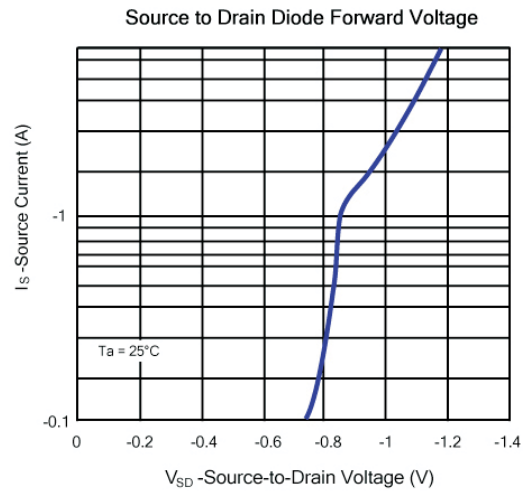
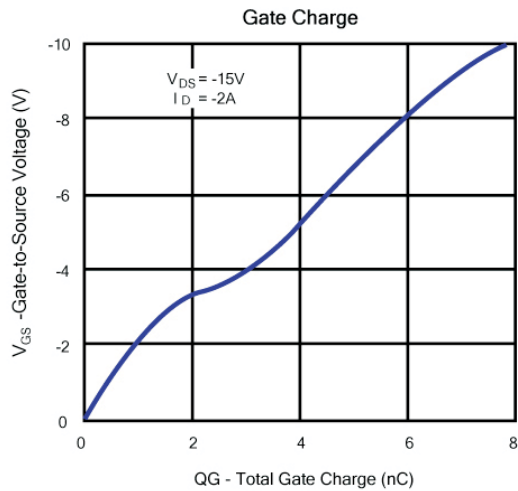
PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
STATIC						
Drain-source breakdown voltage	$V_{GS} = 0V, I_D = -250\mu A$	BV_{DSS}	-30			V
Zero gate voltage drain current	$V_{DS} = -30V, V_{GS} = 0V, T_J = 25^{\circ}C$	I_{DSS}			-1.0	μA
Gate-body leakage current-forward	$V_{GS} = 20V, V_{DS}=0$	I_{GSSF}			100	nA
Gate-body leakage current-reverse	$V_{GS} = -20V, V_{DS}=0$	I_{GSSR}			-100	nA
Gate threshold voltage	$V_{DS} = V_{GS}, I_D = -250\mu A$	$V_{GS(th)}$	-1.0		-3.0	V
Static drain-source on-resistance ^a	$V_{GS} = -10V, I_D = -2.0A$ $V_{GS} = -4.5V, I_D = -1.6A$	$R_{DS(ON)}$		110 160	130 200	m Ω
Diode Forward Voltage	$V_{GS} = 0V, I_S = -1.0A, T_J = 25^{\circ}C$	V_{SD}		-0.85	-1.2	V
DYNAMIC						
Input capacitance	$V_{DS} = -15V, V_{GS} = 0V,$ $f=1.0MHz$	C_{iss}		205		pF
Output capacitance		C_{oss}		42		
Reverse transfer capacitance		C_{rss}		13		
Total gate charge	$V_{DS} = -15V, I_D = -2.0A$ $V_{GS}=-10V$	Q_g		8.0		nC
Total gate charge	$V_{DS} = -15V, I_D = -2.0A$ $V_{GS}=-4.5V$	Q_g		3.7		
Gate-source charge		Q_{gs}		2.0		
Gate-drain charge		Q_{gd}		1.0		
Gate resistance	$V_{DS} = 0V, V_{GS}=0V, f=1MHz$	R_g		7.5		Ω
Turn-On Delay Time	$V_{DS} = -15V, R_L=15\Omega, R_{GEN}=6\Omega$ $V_{GS}=-4.5V$	$t_{d(on)}$		18		ns
Turn-Off Delay Time		t_r		16		
		$t_{d(off)}$		32		
		t_f		8		

Notes: a. Pulse test; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

Rating and characteristic curves (HBM2307S)

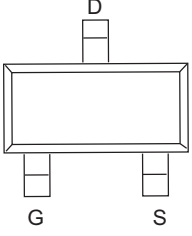
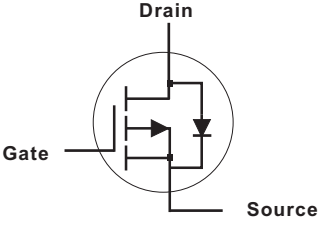


Rating and characteristic curves (HBM2307S)



HBM2307S

Pinning information

Pin	Simplified outline	Symbol
PinD Drain PinG Gate PinS Source		

Marking

Type number	Marking code
HBM2307S	WGSG0A (Note 1)

Note: 1.

P/N :

"WGSG" is HBM2307S-H

"WGS" shown on the 1st~3rd position on --- HBM2307S

"G" shown on the 4th position on --- Green product-Halogen free

D/C :

0A is the sequence of "0-9" & "A~Z"

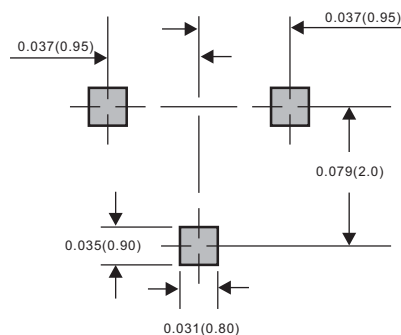
0~9 shown on the 5th position on ---2010~2019

A~Z shown on the 6th position on ---1week~26week

A~Z shown on the 6th position on ---27week~52week

Suggested solder pad layout

SOT-23



Dimensions in inches and (millimeters)