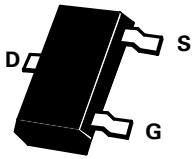
SOT23 P-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

ISSUE 3 - JANUARY 1996

BS250F



SOT23

PARTMARKING DETAIL – MX

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	V_{DS}	-45	V
Continuous Drain Current at T_{amb}=25°C	I_D	-90	mA
Pulsed Drain Current	I_{DM}	-1.6	A
Gate Source Voltage	V_{GS}	± 20	V
Power Dissipation at T_{amb}=25°C	P_{tot}	330	mW
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°C

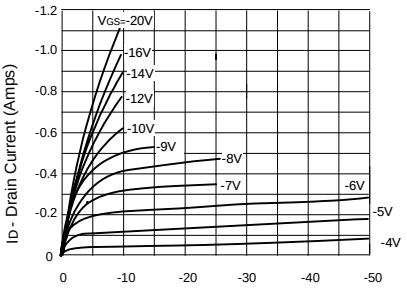
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	BV_{DSS}	-45	-70		V	I_D=-100μA, V_{GS}=0V
Gate-Source Threshold Voltage	$V_{GS(th)}$	-1		-3.5	V	I_D=-1mA, V_{DS}= V_{GS}
Gate-Body Leakage	I_{GSS}			-20	nA	V_{GS}=-15V, V_{DS}=0V
Zero Gate Voltage Drain Current	I_{DSS}			-0.5.	μA	V_{DS}=-25V, V_{GS}=0V
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		9	14	Ω	V_{GS}=-10V,I_D=-200mA
Forward Transconductance (1)(2)	g_{fs}		90		mS	V_{DS}=-10V,I_D=-200mA
Input Capacitance (2)	C_{iss}		25		pF	V_{DS}=-10V, V_{GS}=0V, f=1MHz
Turn-On Delay Time (2)(3)	$t_{d(on)}$			10	ns	V_{DD}≈-25V, I_D=-200mA
Rise Time (2)(3)	t_r			10	ns	
Turn-Off Delay Time (2)(3)	$t_{d(off)}$			10	ns	
Fall Time (2)(3)	t_f			10	ns	

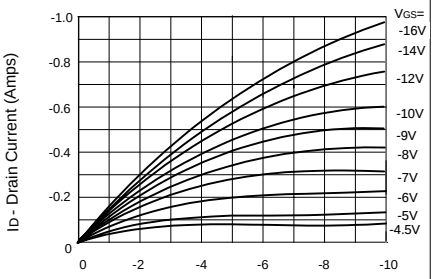
(1) Measured under pulsed conditions. Width=300μs. Duty cycle ≤2% (2) Sample test.
(3) Switching times measured with 50Ω source impedance and <5ns rise time on a pulse generator
Spice parameter data is available upon request for this device

BS250F

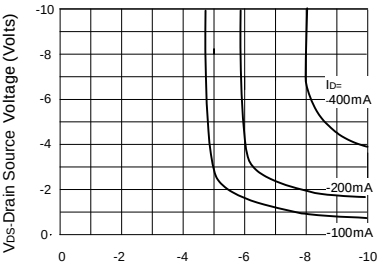
TYPICAL CHARACTERISTICS



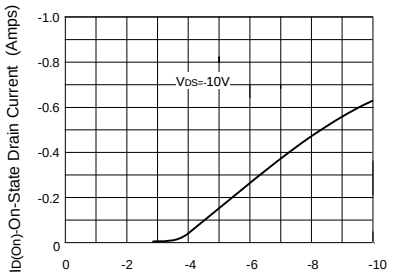
Output Characteristics



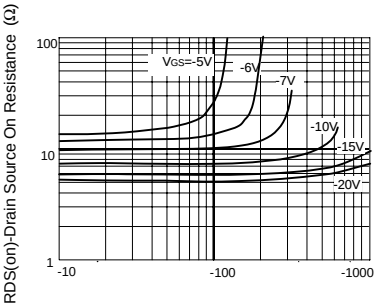
Saturation Characteristics



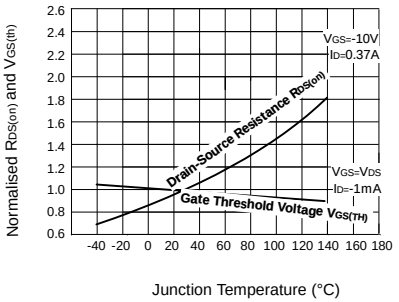
Voltage Saturation Characteristics



Transfer Characteristics

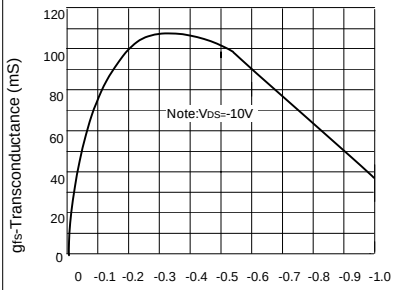


On-resistance vs Drain Current

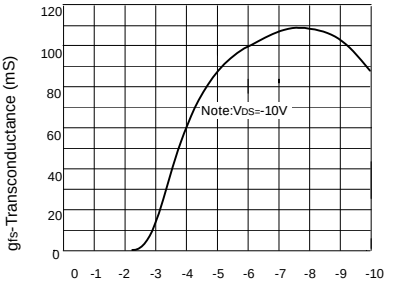


Normalised $R_{DS(on)}$ and $V_{GS(th)}$ vs Temperature

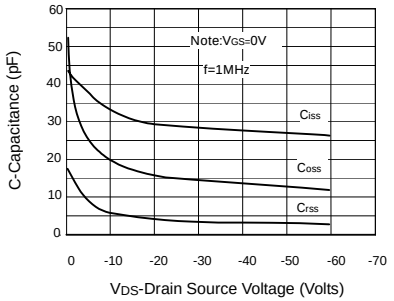
TYPICAL CHARACTERISTICS



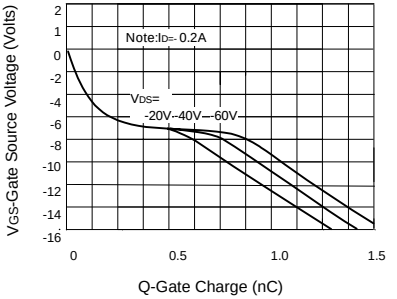
Transconductance v drain current



Transconductance v gate-source voltage



Capacitance v drain-source voltage



Gate charge v gate-source voltage