

Small Signal MOSFET P-Channel

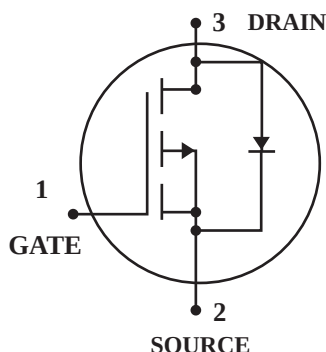
Pb Lead(Pb)-Free

Features:

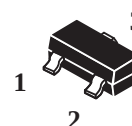
- *Low On-Resistance : 10Ω
- *Low Input Capacitance: 30PF
- *Low Out put Capacitance : 10PF
- *Low Threshold : 2.0V
- *Fast Switching Speed : 2.5ns

Application:

- * DC to DC Converter
- * Cellular & PCMCIA Card
- * Cordless Telephone
- * Power Management in Portable and Battery etc.



SOT-23



Maximum Ratings (TA=25°C Unless Otherwise Specified)

Rating	Symbol	Value	Unite
Drain-Source Voltage	V_{DS}	50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current (TA=25°C)	I_D	130	mA
Pulsed Drain Current($t_p \leq 10\mu s$)	I_{DM}	520	mA
Power Dissipation (TA=25°C)	P_D	225	mW
Maximax Junction-to-Ambient	$R_{\theta JA}$	556	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	°C

Device Marking

BSS84=PD

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
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Static⁽¹⁾

Drain-Source Breakdown Voltage $V_{GS}=0V, I_D=250\text{ }\mu\text{A}$	$V_{(BR)DSS}$	50	-	-	V
Gate-Source Threshold Voltage $V_{DS}=V_{GS}, I_D=1.0\text{ mA}$	$V_{GS(th)}$	0.8	-	2.0	V
Gate-Source Leakage Current $V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}	-	-	± 60	μA
Zero Gate Voltage Drain Current $V_{DS}=25V, V_{GS}=0V$ $V_{DS}=50V, V_{GS}=0V$	I_{DSS}	-	-	0.1 15	μA
Drain-Source On-Resistance $V_{GS}=5.0V, I_D=100\text{mA}$	$r_{DS(on)}$	-	5.0	10	Ω
Forward Transconductance $V_{DS}=25V, I_D=100\text{mA}, f=1.0\text{KHZ}$	g_{fs}	50	-	-	mS

Dynamic

Input Capacitance $V_{DS}=5V, V_{GS}=0V, f=1\text{MHz}$	C_{iss}	-	30	-	PF
Output Capacitance $V_{DS}=5V, V_{GS}=0V, f=1\text{MHz}$	C_{oss}	-	10	-	
Reverse Transfer Capacitance $V_{DS}=5V, V_{GS}=0V, f=1\text{MHz}$	C_{rss}	-	5.0	-	

Switching⁽²⁾

Turn-On Time $V_{DD}=-15V, I_D=-2.5A, R_L=50\text{ }\Omega$	$t_{d(on)}$	-	25	-	nS
Rise Time $V_{DD}=-15V, I_D=-2.5A, R_L=50\text{ }\Omega$	t_r	-	1.0	-	
Turn-Off Time $V_{DD}=-15V, I_D=-2.5A, R_L=50\text{ }\Omega$	$t_{d(off)}$	-	16	-	nS
Fall Time $V_{DD}=-15V, I_D=-2.5A, R_L=50\text{ }\Omega$	t_f	-	8.0	-	
Gate Charge	Q_T	-	6000	-	PC

Source-Drain Diode Characteristics

Continuous Current	I_S	-	-	0.130	A
Pulsed Current	I_{SM}	-	-	0.520	
Forward Voltage ⁽²⁾	V_{SD}	-	2.5	-	V

Note:

1. Pulse Test : $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
2. Switching Time is Essentially Independent of Operating Temperature.

TYPICAL ELECTRICAL CHARACTERISTICS

