

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- Low Gate Charge for Fast Switching.
- ESD Protected Gate.

APPLICATIONS

- Power Management Load Switch
- ESD Protected: 1500V
- Easily designed drive circuits

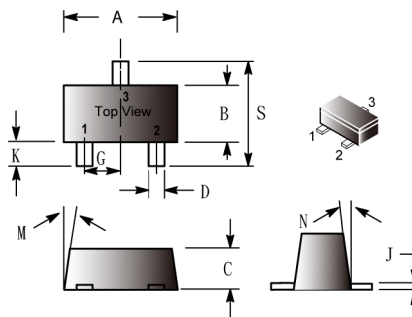
MARKING

RS

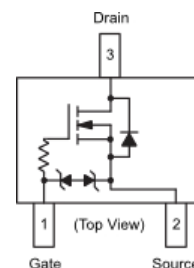
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-523	3K	7 inch

SOT-523



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.50	1.70	K	0.30	0.50
B	0.75	0.95	M	---	10 ⁰
C	0.60	0.80	N	---	10 ⁰
D	0.23	0.33	S	1.50	1.70
G	0.50BSC				
J	0.10	0.20			



MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DSS}	60	V
Gate-Source Voltage(Continuous)		V _{GSS}	±20	V
Drain Current	Continuous	I _D	115	mA
	Pulsed	I _{DP} ¹	800	
Reverse drain current	Continuous	I _{Dr}	115	mA
	Pulsed	I _{DRP} ¹	800	
Total Power Dissipation		P _D ²	225	mW
Channel temperature		T _J	150	°C
Operating Storage Temperature Range		T _{STG}	-55~150	°C

Note

1. P_w ≤ 10 μs, Duty cycle ≤ 1 %
2. When mounted on a 1*0.75*0.062 inch glass epoxy board

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Off Characteristics ²						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	-	-	V	$V_{GS}=0, I_D=10\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	$V_{DS}=60\text{V}, V_{GS}=0$
Gate-Source Leakage	I_{GSS}	-	-	± 10	μA	$V_{GS}=\pm 20\text{V}, V_{DS}=0$
On Characteristics ²						
Gate Threshold Voltage	$V_{GS(th)}$	1	1.5	2	V	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$
Static Drain-Source On Resistance	$R_{DS(ON)}$	-	-	7.5	Ω	$V_{GS}=10\text{V}, I_D=0.5\text{A}$
		-	-	7.5		$V_{GS}=5\text{V}, I_D=0.05\text{A}$
Forward transfer admittance ¹	g_{fs}	80	-	-	mS	$V_{DS}=10\text{V}, I_D=0.2\text{A}$
Dynamic Characteristics						
Input Capacitance	C_{iss}	-	25	50	pF	$V_{DS}=25\text{V},$ $V_{GS}=0,$ $f=1\text{MHz}$
Output Capacitance	C_{oss}	-	10	25		
Reverse Transfer Capacitance	C_{rss}	-	3	5		
Switching Characteristics						
Turn-On Delay Time ¹	$T_{d(ON)}$	-	12	20	nS	$V_{DD}=30\text{V},$ $V_{GS}=10\text{V},$ $I_D=0.2\text{A},$ $R_G=10\Omega,$ $R_L=150\Omega$
Turn-Off Delay Time ¹	$T_{d(OFF)}$	-	20	30		

Note:

1. Pulse Test : pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$
2. When mounted on a 1*0.75*0.062 inch glass epoxy board

CHARACTERISTIC CURVE

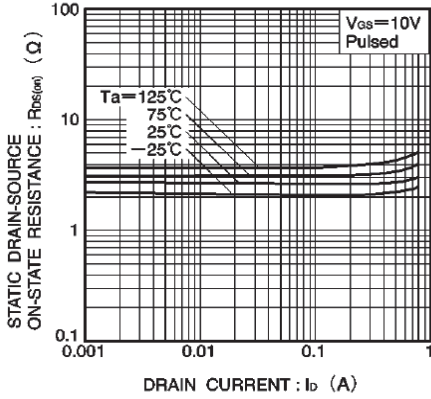


Fig.4 Static drain-source on-state resistance vs. drain current (I)

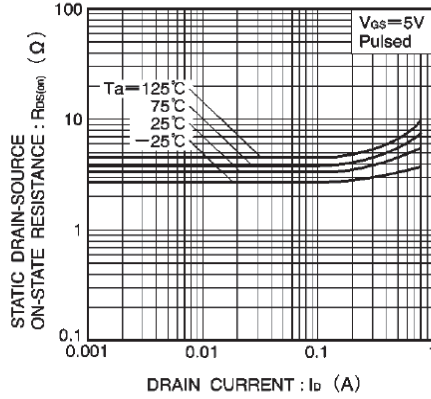


Fig.5 Static drain-source on-state resistance vs. drain current (II)

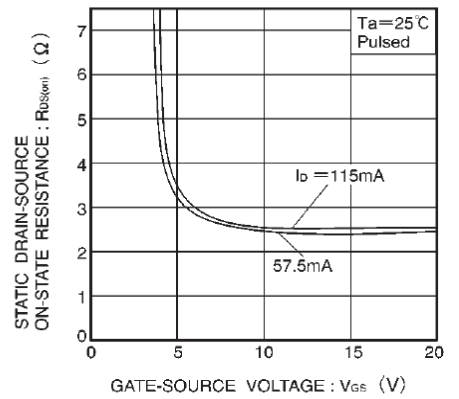


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

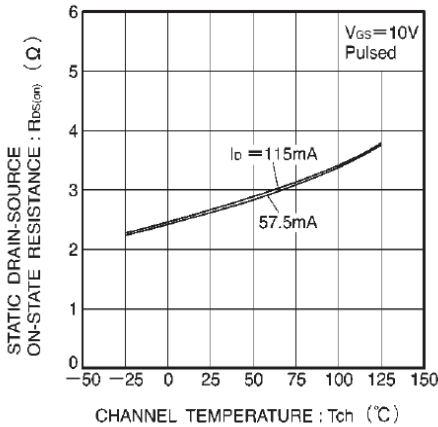


Fig.7 Static drain-source on-state resistance vs. channel temperature

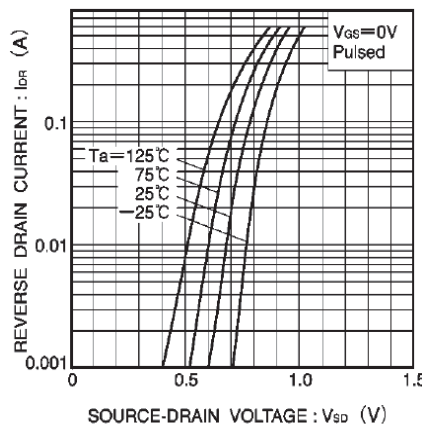


Fig.8 Reverse drain current vs. source-drain voltage (I)

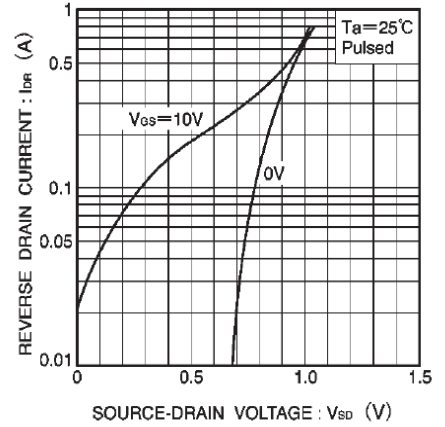


Fig.9 Reverse drain current vs. source-drain voltage (II)

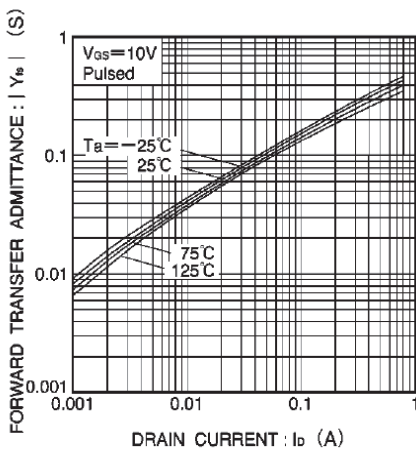


Fig.10 Forward transfer admittance vs. drain current

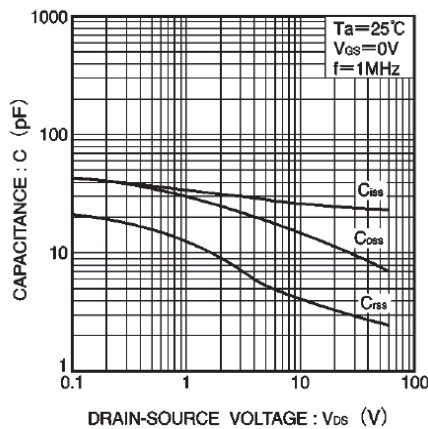


Fig.11 Typical capacitance vs. drain-source voltage

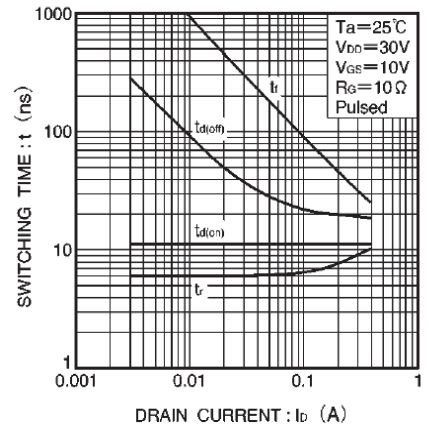


Fig.12 Switching characteristics (See Figures 13 and 14 for the measurement circuit and resultant waveforms)