

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

FEATURES

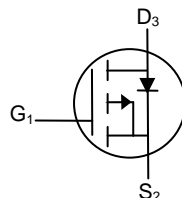
- Low On-Resistance : 10 Ω
- Low Input Capacitance: 30PF
- Low Out Put Capacitance : 10PF
- Low Threshold : 2V
- Fast Switching Speed : 2.5ns

APPLICATIONS

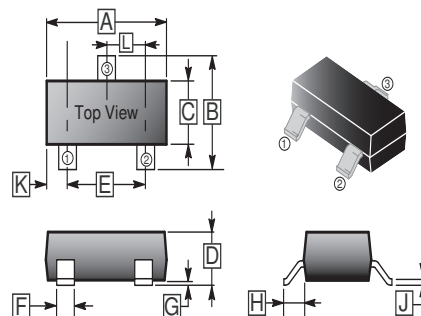
- DC-DC Converter
- Cellular & PCMCIA Card
- Cordless Telephone
- Power Management in Portable and Battery etc

MARKING

PD



SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.04	G	-	0.18
B	2.10	2.80	H	0.40	0.60
C	1.20	1.60	J	0.08	0.20
D	0.89	1.40	K	0.6 REF.	
E	1.78	2.04	L	0.85	1.15
F	0.30	0.50			

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-50	V
Continuous Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current @ $T_A=25^\circ\text{C}$	I_D	-130	mA
Pulsed Drain Current ($t_p \leq 10\mu\text{s}$)	I_{DM}	-520	mA
Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static Characteristics ¹						
Drain-Source Breakdown Voltage	BV_{DSS}	-50	-	-	V	$V_{GS}=0, I_D = -250\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-0.1	μA	$V_{GS}=0, V_{DS} = -25\text{V}$
		-	-	-15		$V_{GS}=0, V_{DS} = -50\text{V}$
Gate-Source Leakage Current	I_{GSS}	-	-	± 60	μA	$V_{GS}=\pm 20\text{V}, V_{DS} = 0$
Gate-Source Threshold Voltage	$V_{GS(th)}$	-0.8	-	-2	V	$V_{DS}=V_{GS}, I_D = -1\text{mA}$
Static Drain-Source On Resistance	$R_{DS(ON)}$	-	5	10	Ω	$V_{GS}= -5\text{V}, I_D = -0.1\text{A}$
Forward Transconductance	g_{FS}	50	-	-	mS	$V_{DS}= -25\text{V}, I_D = -0.1\text{A}, f=1.0\text{KHz}$
Dynamic Characteristics						
Input Capacitance	C_{iss}	-	30	-	pF	$V_{DS}= -5\text{V}, V_{GS}=0, f=1\text{MHz}$
Output Capacitance	C_{oss}	-	10	-		
Reverse Transfer Capacitance	C_{rss}	-	5	-		
Switching Characteristics ²						
Turn-On Delay Time	$T_{d(ON)}$	-	25	-	nS	$V_{DD}= -15\text{V}, I_D= -2.5\text{A}, R_L=50\Omega,$
Turn-Off Delay Time	$T_{d(OFF)}$	-	16	-		
Rise Time	T_r	-	1	-		
Fall Time	T_f	-	8	-		
Gate Charge	Q_T	-	6000	-	pC	
Source-Drain Diode Characteristics						
Continuous Current	I_S	-	-	0.13	A	
Pulsed Current	I_{SM}	-	-	0.52		
Forward Voltage ²	V_{SD}	-	-2.5	-	V	

Notes:

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

CHARACTERISTIC CURVE

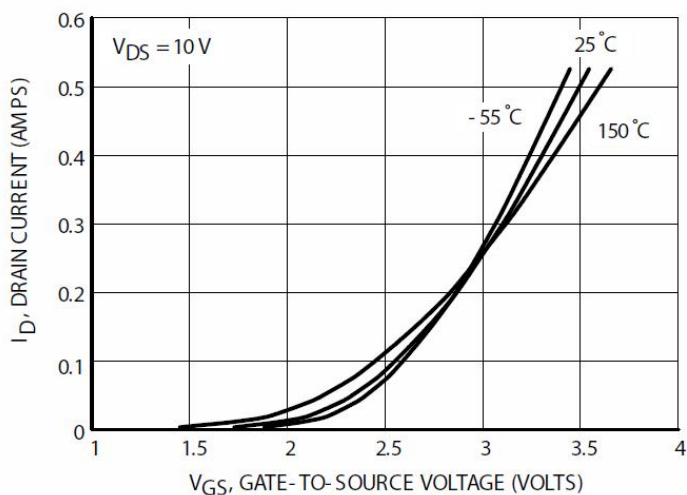


FIG1. Transfer Characteristics

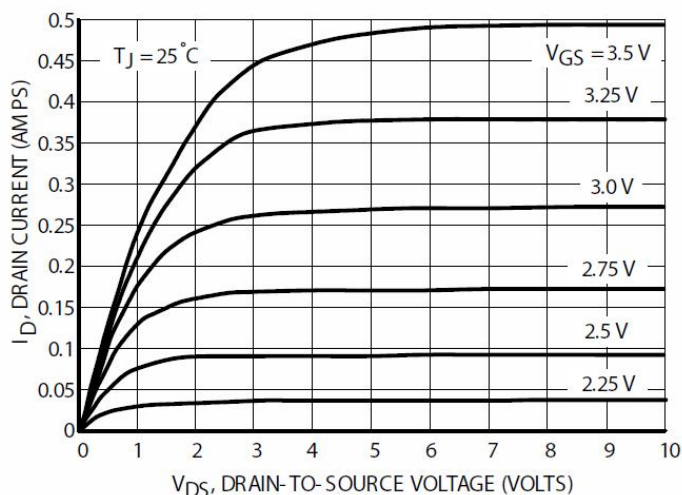


FIG2. On-Region Characteristics

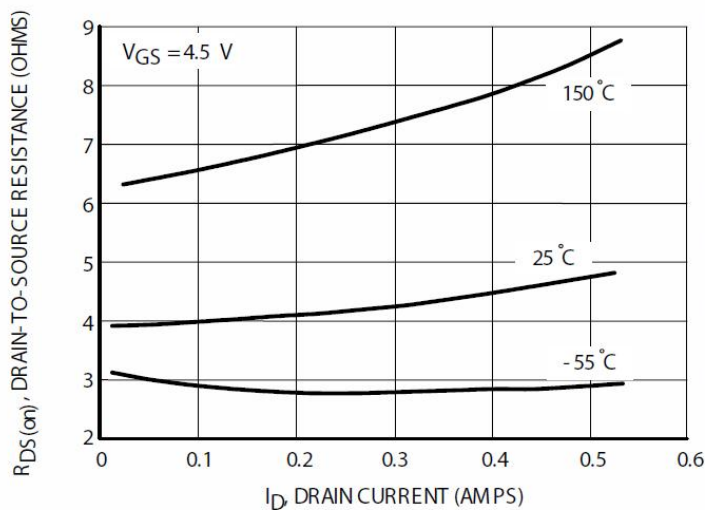


FIG3. On-Resistance versus Drain Current

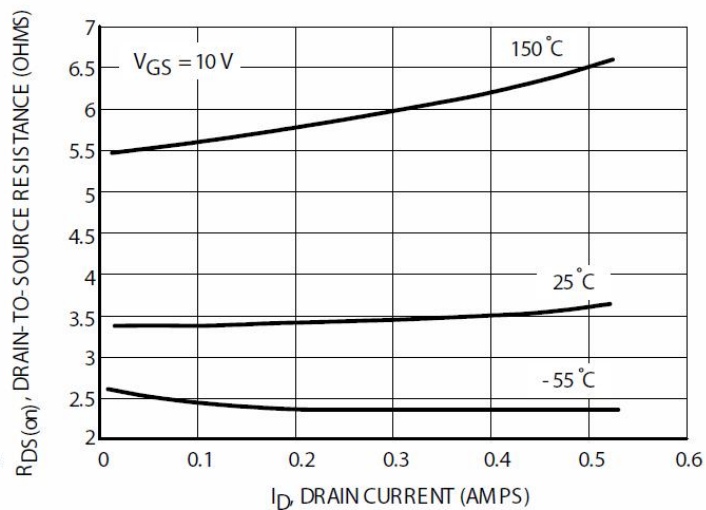


FIG4. On-Resistance versus Drain Current

CHARACTERISTIC CURVE

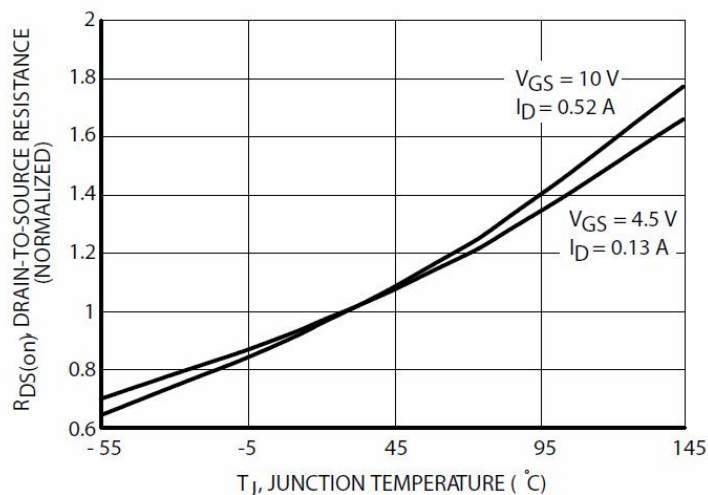


FIG5. On-Resistance Variation with Temperature

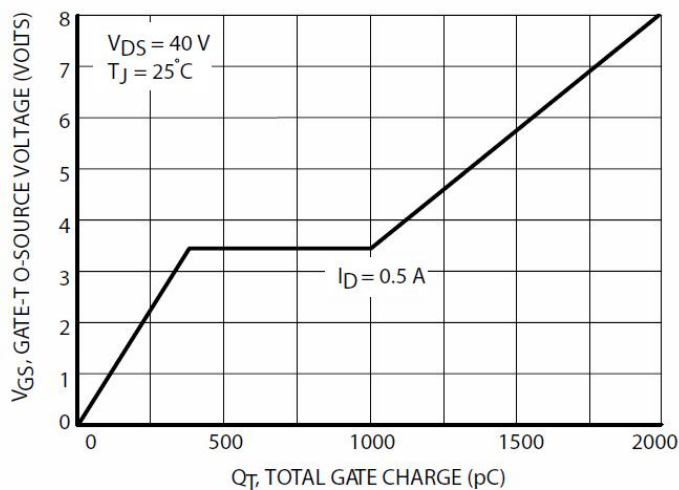


FIG6. Gate Charge

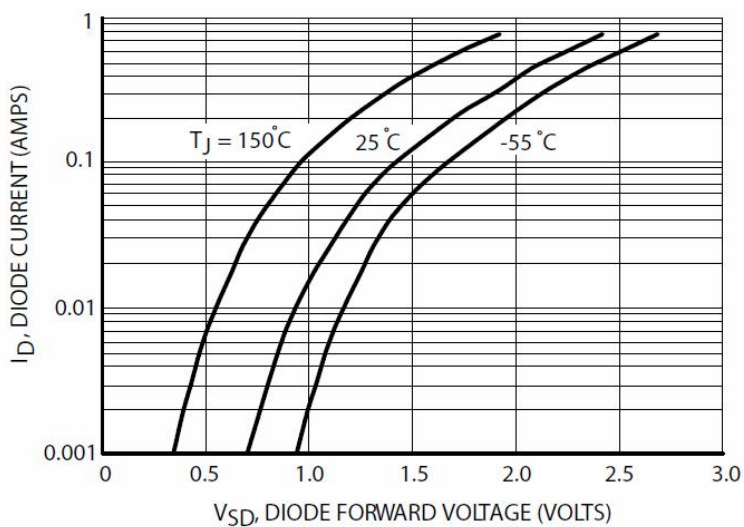


FIG7. Body Diode Forward Voltage