

Description

This-20V P-Channel MOSFET in a SOT-23-6 Plastic Package.

Applications

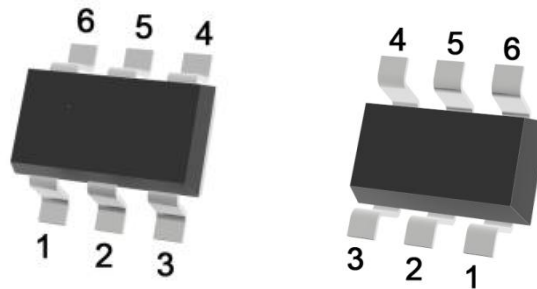
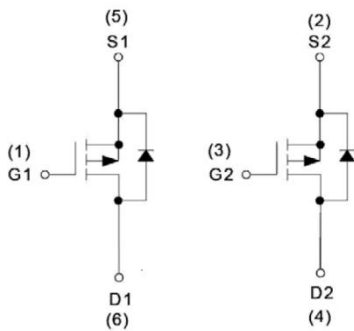
Power Management in Notebook computer, Portable Equipment and Battery powered systems.

Features

- Super high dense cell design for low $R_{DS(ON)}$,
- Rugged and reliable.
- Halogen-free product.

V_{DSS}	$R_{DS(on)Typ}$	I_D
-20V	75mΩ	-3A

Equivalent Circuit & Pinning



PIN1 : G1 PIN 2 : S2 PIN 3 : G2
PIN 4 : D2 PIN 5 : S1 PIN 6 : D1

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D^*	-3.0	A
Pulsed Drain Current	I_{DM}^*	-12	A
Diode Continuous Forward Current	I_S^*	-2.0	A
Power Dissipation for Single Operation	P_D^* (Ta=25℃)	1.25	W
Power Dissipation for Single Operation	P_D^* (Ta=100℃)	0.5	W
Maximum Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 ~ 150	℃
Thermal Resistance-Junction to Ambient	$R_{\theta JA}^*$	70	℃/W

Note:

 * Surface Mounted on 1in2 pad area, $t \leq 10\text{sec}$.

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_{DS}=-250\mu A$	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-16V$ $V_{GS}=0V$			-1	μA
		$V_{DS}=-16V$ $V_{GS}=0V$ $T_j=85^\circ C$			-10	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_{DS}=-250\mu A$	-0.50	-0.8	-1.0	V
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 12V$ $V_{DS}=0V$			±100	nA
Drain-Source On-state Resistance	$R_{DS(ON)}^a$	$V_{GS}=-10V$ $I_{DS}=-2.7A$		75	97	mΩ
		$V_{GS}=-4.5V$ $I_{DS}=-2.7A$		88	110	
		$V_{GS}=-2.5V$ $I_{DS}=-2.2A$		120	150	
Diode Forward Voltage	V_{SD}^a	$V_{GS}=0V$ $I_{SD}=-1.0A$		-0.7	-1.3	V
Total Gate Charge	Q_g^b	$V_{DS}=-6V$ $V_{GS}=-4.5V$ $I_{DS}=-2.7A$		5.8	10	nC
Gate-Source Charge	Q_{gs}^b			0.85		nC
Gate-Drain Charge	Q_{gd}^b			1.7		nC

Electrical Characteristics(Ta=25℃)

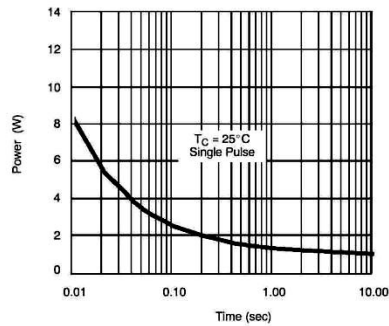
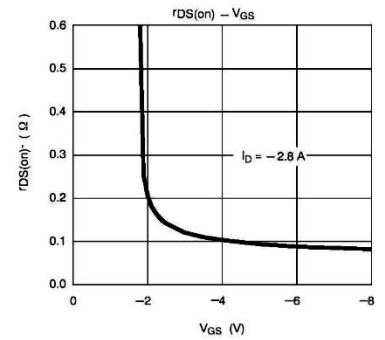
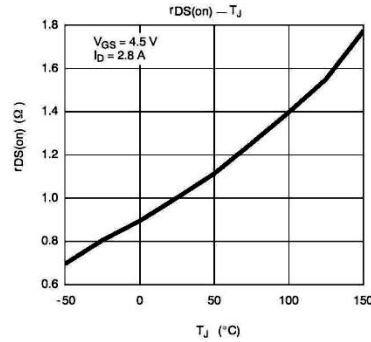
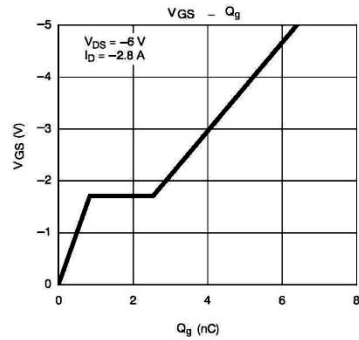
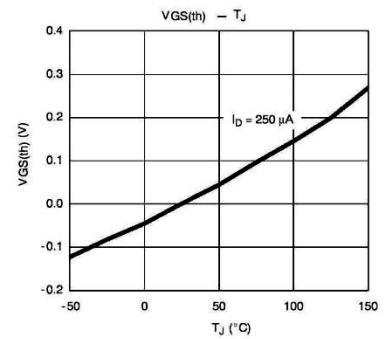
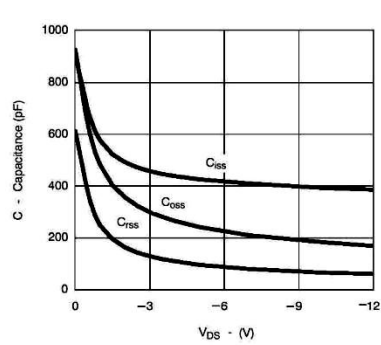
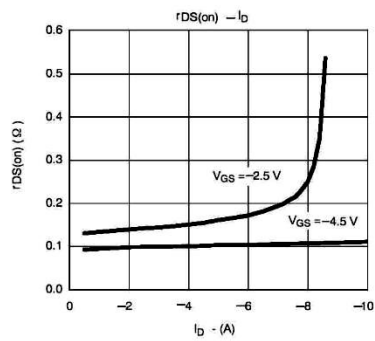
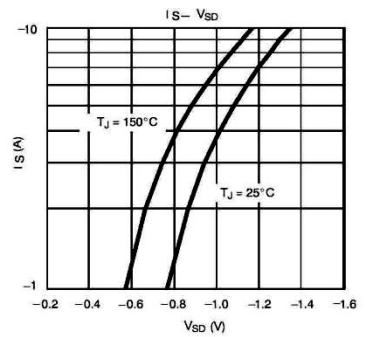
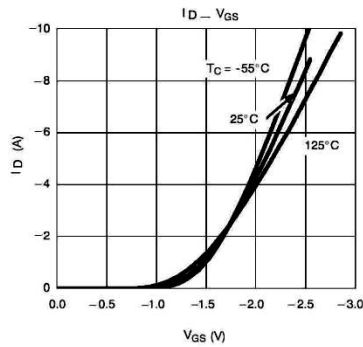
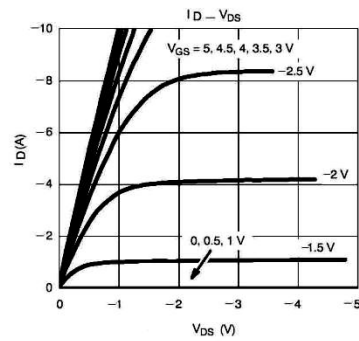
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate Resistance	R_G^b	$V_{GS}=0V$ $V_{DS}=0V$ $F=1MHz$		6		Ω
Input Capacitance	C_{iss}^b	$V_{GS}=0V$ $V_{DS}=-6V$ Frequency=1.0MHz		415		pF
Output Capacitance	C_{oss}^b			223		
Reverse Transfer Capacitance	C_{rss}^b			84		
Turn-on Delay Time	$t_{d(ON)}^b$	$V_{DD}=-6V$ $R_L=6\Omega$ $I_{DS}=-1A$ $V_{GEN}=-10V$ $R_G=6\Omega$		13	25	ns
Turn-on Rise Time	T_r^b			36	60	
Turn-off Delay Time	$T_{d(OFF)}^b$			42	70	
Turn-off Fall Time	T_f^b			34	60	

Notes:

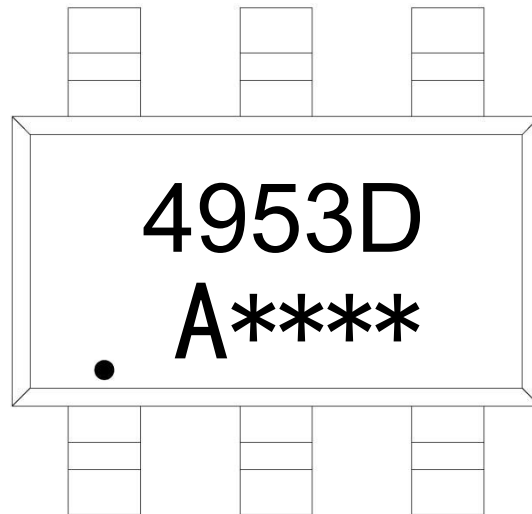
 a : Pulse test ; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

b : Guaranteed by design, not subject to production testing.

Electrical Characteristic Curve



Marking Instructions



Note:

4953D: Product Type

A: Chip sign(Flag bit may be empty,or the letter A、B、C、D.....).

****: Lot No. Code, code change with Lot No.

Packaging SPEC.

REEL INFORMATION

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT23-6	3,000	10	30,000	4	120,000	7" x8	210×205×205	445×230×435

Package Outline Dimensions

