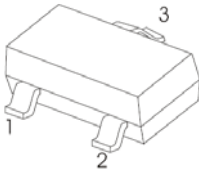


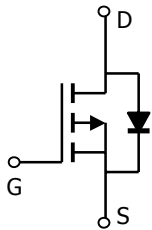
■ Features

- $V_{DS}(V) = -20V$
- $R_{DS(ON)} < 40m\Omega (V_{GS} = -4.5V, I_D = -4.2A)$
- $R_{DS(ON)} < 50m\Omega (V_{GS} = -2.5V, I_D = -3.4A)$

SOT - 23



1. GATE
2. SOURCE
3. DRAIN



■ Absolute Maximum Ratings $T_a = 25^{\circ}C$

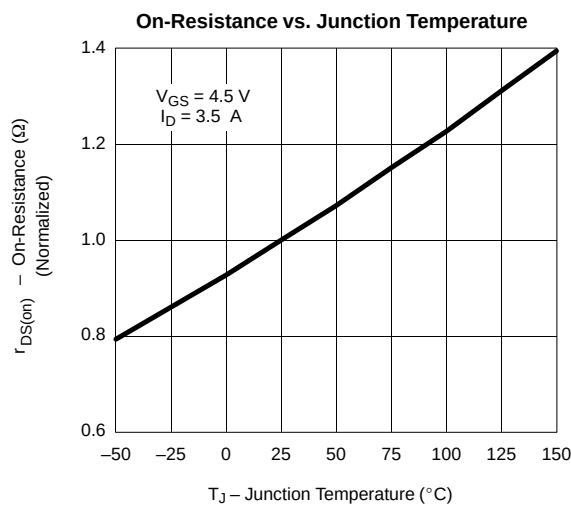
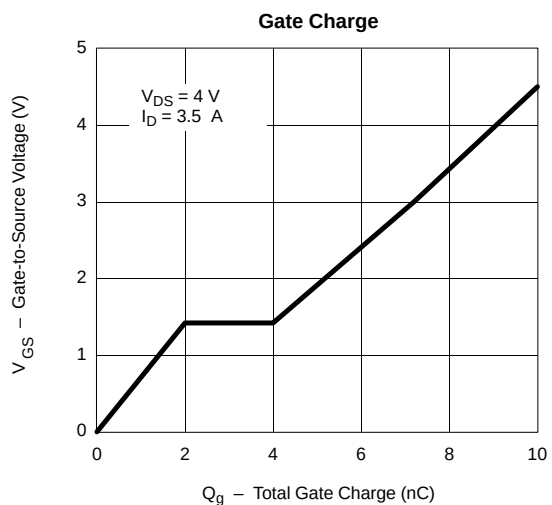
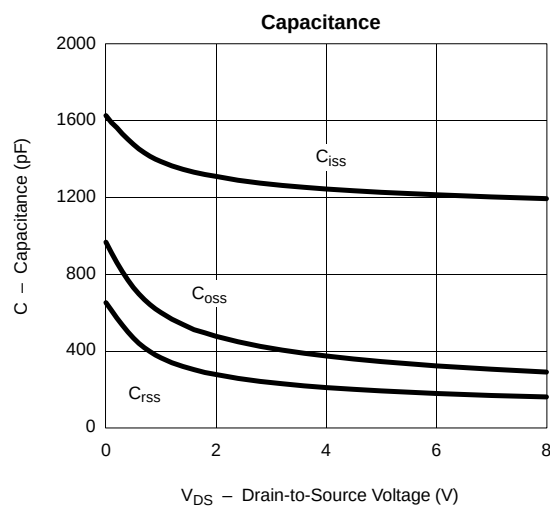
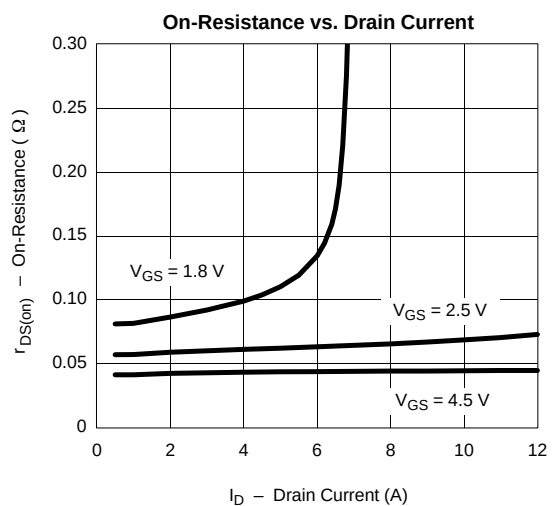
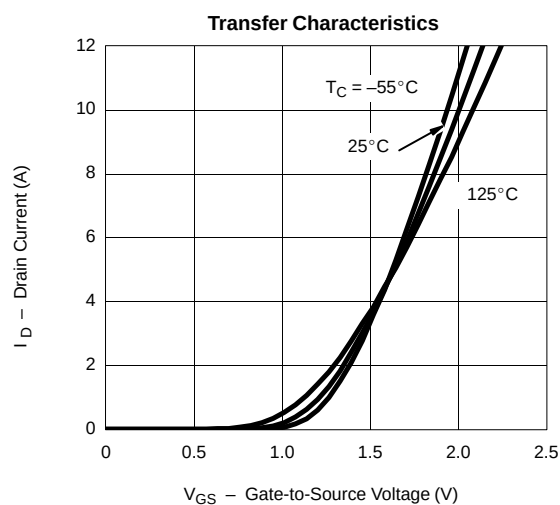
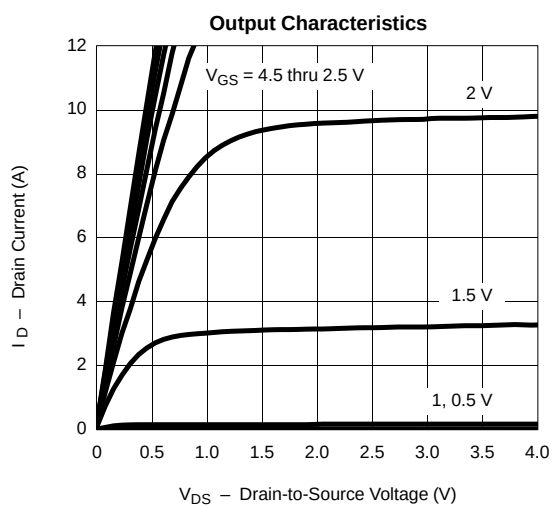
Parameter	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	-20	V
Gate-source voltage	V_{GS}	± 12	V
Continuous drain current $T_A = 25^{\circ}C$ $T_A = 70^{\circ}C$	I_D	-4.2 -3.4	A
Pulsed drain current	I_{DM}	-10	A
Power dissipation $T_A = 25^{\circ}C$ $T_A = 70^{\circ}C$	P_D	1.38 0.8	W
Thermal Resistance.Junction-to-Ambient	$R_{\theta JA}$	90	$^{\circ}C/W$
Operating junction and storage temperature range	T_j, T_{stg}	-55 to +150	$^{\circ}C$

■ Electrical Characteristics Ta = 25℃

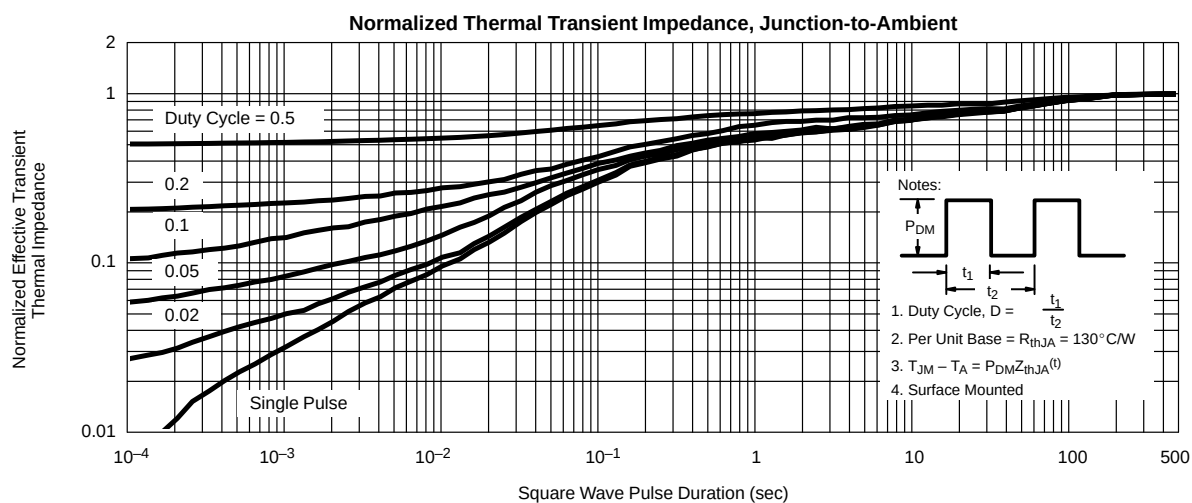
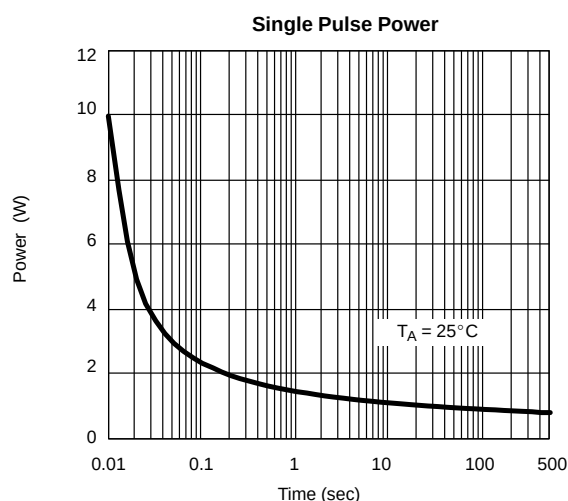
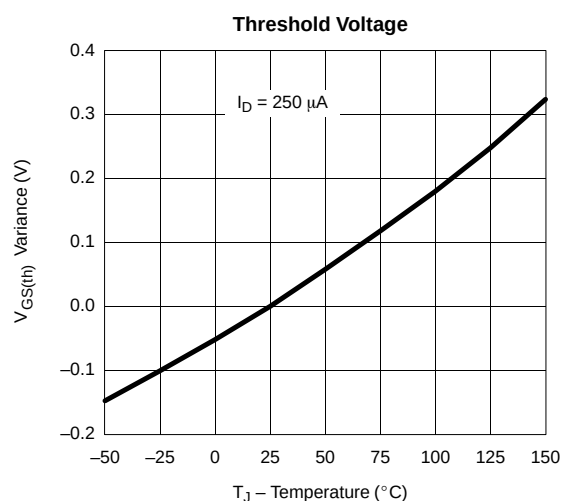
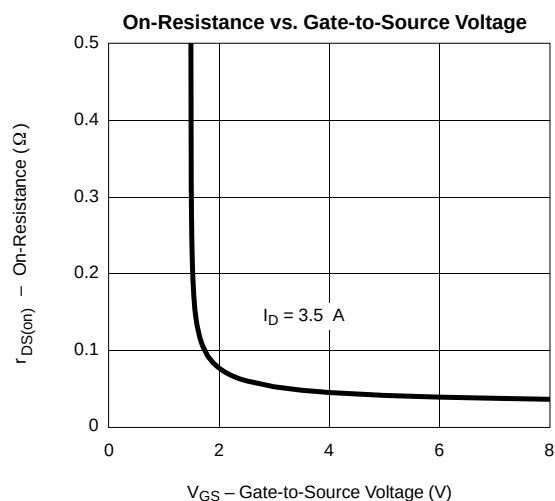
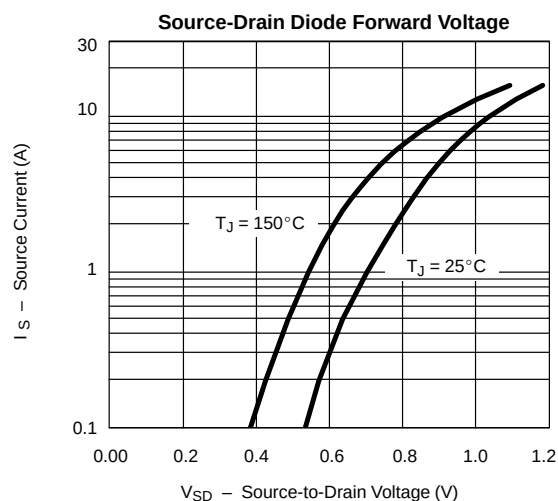
Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	V_{DS}	$V_{GS} = 0\text{ V}, I_D = -10\text{ }\mu\text{A}$	-20			V
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\text{ }\mu\text{A}$	-0.5			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -20\text{ V}, V_{GS} = 0\text{ V}$			-1	μA
		$V_{DS} = -16\text{ V}, V_{GS} = 0\text{ V}, T_J = 55\text{ }^\circ\text{C}$			-10	
Gate-body leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 12\text{ V}$			± 100	nA
Drain-source on-state resistance	$r_{DS(on)}$	$V_{GS} = -4.5\text{ V}, I_D = -4.2\text{ A}$			40	m Ω
		$V_{GS} = -2.5\text{ V}, I_D = -3.4\text{ A}$			50	
On-state drain current	$I_{D(on)}$	$V_{DS} \leq -5\text{ V}, V_{GS} = -4.5\text{ V}$	-6			A
		$V_{DS} \leq -5\text{ V}, V_{GS} = -2.5\text{ V}$	-3			
Forward transconductance	g_{fs}	$V_{DS} = -5\text{ V}, I_D = -2.8\text{ A}$		9		S
Input capacitance *	C_{iss}	$V_{DS} = -15\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$		740		pF
Output capacitance *	C_{oss}			167		
Reverse transfer capacitance *	C_{rss}			126		
Total gate charge *	Q_g	$V_{DS} = -16\text{ V}, V_{GS} = -4.5\text{ V}, I_D = -4.2\text{ A}$		10.6		nC
Gate-source charge *	Q_{gs}			2.32		
Gate-drain charge *	Q_{gd}			3.68		
Turn-on Delay time	$t_{d(on)}$	$V_{DD} = -15\text{ V}, R_L = 3.6\Omega, I_D = -4.2\text{ A}, V_{GEN} = -10\text{ V}, R_G = 6\Omega$		5.9		ns
Turn-on Rise time	t_r			3.6		
Turn-off Dealy time	$t_{d(off)}$			32.4		
Turn-off Fall time	t_f			2.6		
Continuous source current (diode conduction) *	I_S			-1.6		A
Diode forward voltage	V_{SD}	$I_S = -1.2\text{ A}, V_{GS} = 0\text{ V}$			-1.2	V

* Pulse test: $PW \leq 300\text{ }\mu\text{s}$ duty cycle $\leq 2\%$.

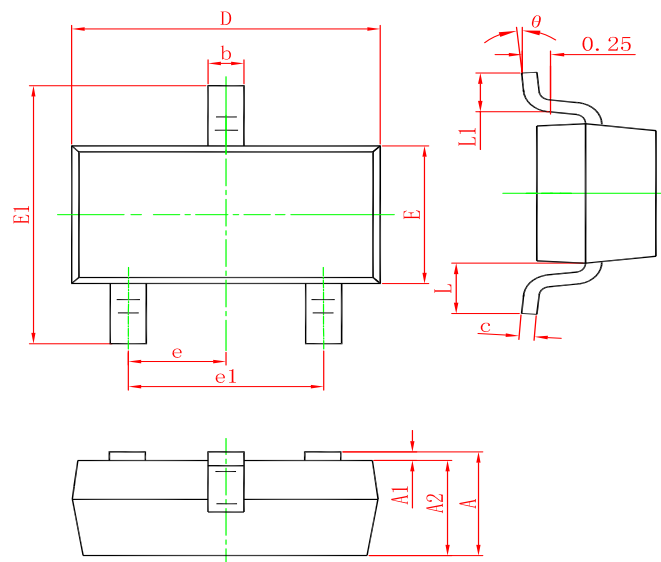
Typical Characteristics



Typical Characteristics

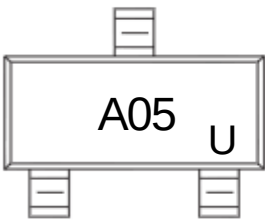


SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Marking



Ordering information

Order code	Package	Baseqty	Deliverymode
SI2305A	SOT-23	3000	Tape and reel