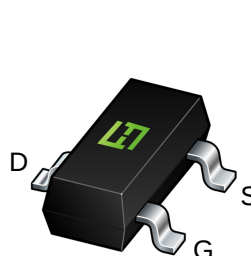


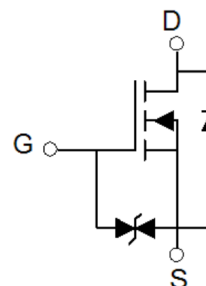
Features

- * $V_{DS} = 20V$, $I_D = 0.98A$
- * $R_{DS(ON)} = \text{Typ } 190m\Omega @ V_{GS} = 4.5V$
- * $R_{DS(ON)} = \text{Typ } 255m\Omega @ V_{GS} = 2.5V$
- * ESD protected
- * SOT-523 package

Package and Circuit Diagram

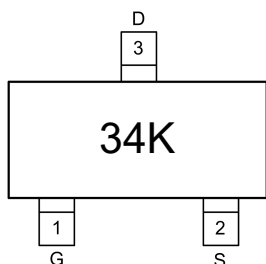


SOT-523



Circuit diagram

Marking diagram



Ordering Information

Part Number	Packaging	Reel Size
FS3134KT5	3000/Tape & Reel	7 inch

Absolute maximum ratings ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Continuous Drain Current ($T_A = 25^\circ\text{C}$)	0.98	A
I_D	Continuous Drain Current ($T_A = 70^\circ\text{C}$)	0.6	A
I_{DM}	Pulsed Drain Current ^{note1}	3	A
P_D	Power Dissipation ($T_A = 25^\circ\text{C}$)	0.2	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	625	$^\circ\text{C}/\text{W}$
T_J	Maximum Junction Temperature	$-40 \sim +150$	$^\circ\text{C}$
T_{STG}	Storage Temperature	$-55 \sim +150$	$^\circ\text{C}$

Electrical characteristics (T_A=25°C unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
Off characteristics						
V _{(BR)DS}	Drain-source breakdown voltage	V _{GS} = 0V, I _D = 250μA	20			V
I _{DS}	Zero gate voltage drain current	V _{DS} = 16V, V _{GS} = 0V			1	μA
I _{GS}	Gate to body leakage current	V _{DS} = 0V, V _{GS} = ±12V			± 10	μA
On characteristics						
V _{GS(th)}	Gate threshold voltage	V _{DS} = V _{GS} , I _D = 250μA	0.5	0.75	1	V
R _{DS(on)}	Static drain-source on resistance ^{Note2}	V _{GS} = 4.5V, I _D = 0.55A		190	230	mΩ
		V _{GS} = 2.5V, I _D = 0.45A		255	330	mΩ
		V _{GS} = 1.8V, I _D = 0.35A		365	550	mΩ
Dynamic characteristics						
C _{iss}	Input capacitance	V _{DS} = 10V V _{GS} = 0V f = 1MHz		41		pF
C _{oss}	Output capacitance			17		pF
C _{rss}	Reverse transfer capacitance			10		pF
Q _g	Total gate charge	V _{DS} = 10V I _D = 1A V _{GS} = 4.5V		1		nC
Q _{gs}	Gate-source charge			0.3		nC
Q _{gd}	Gate-drain charge			0.1		nC
Switching characteristics						
t _{d(on)}	Turn-on delay time	V _{DS} = 10V I _D = 1A R _{GEN} = 6Ω V _{GS} = 4.5V		1.2		ns
t _r	Turn-on rise time			24.7		ns
t _{d(off)}	Turn-off delay time			13.6		ns
t _f	Turn-off fall time			14.8		ns
Drain-source diode characteristics and maximum ratings						
V _{SD}	Drain to source diode forward voltage	V _{GS} = 0V, I _S = 1A		0.85	1.1	V
I _S	Maximum continuous drain to source diode forward current				0.98	A
t _{rr}	Body diode reverse recovery time	I _F = 1A, di/dt = 100A/μs		9.2		ns
Q _{rr}	Body diode reverse recovery charge			0.8		nC

Notes: 1. Repetitive rating: pulse width limited by maximum junction temperature

2. Pulse test: pulse width ≤ 300μs, duty cycle ≤ 2%

Typical performance characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

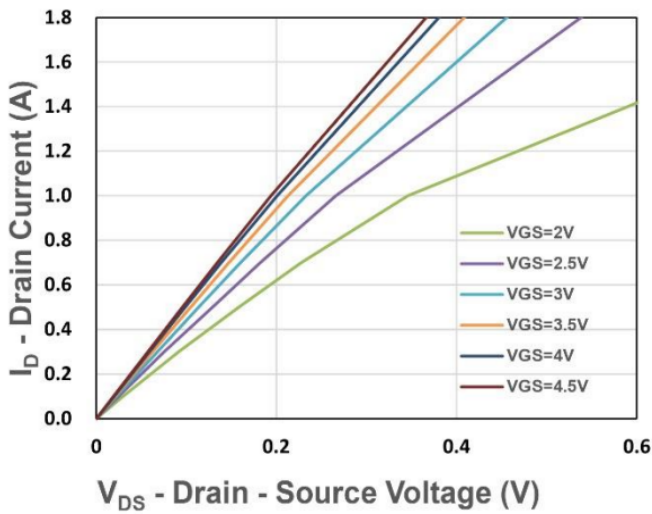


Figure 1. Output Characteristics

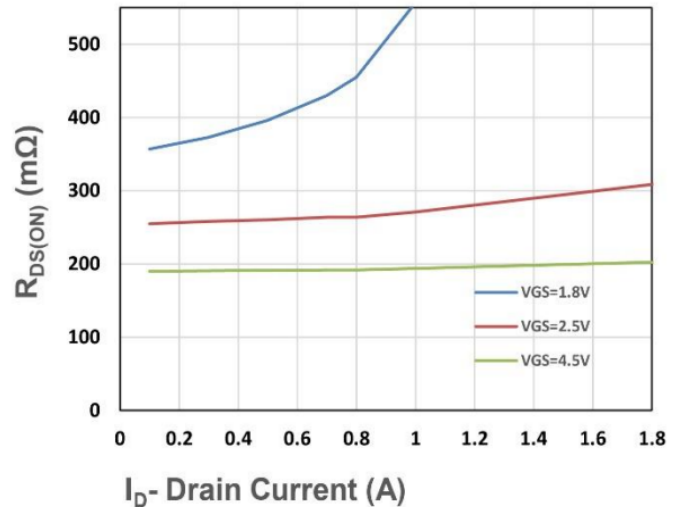


Figure 2. On-Resistance vs. I_D

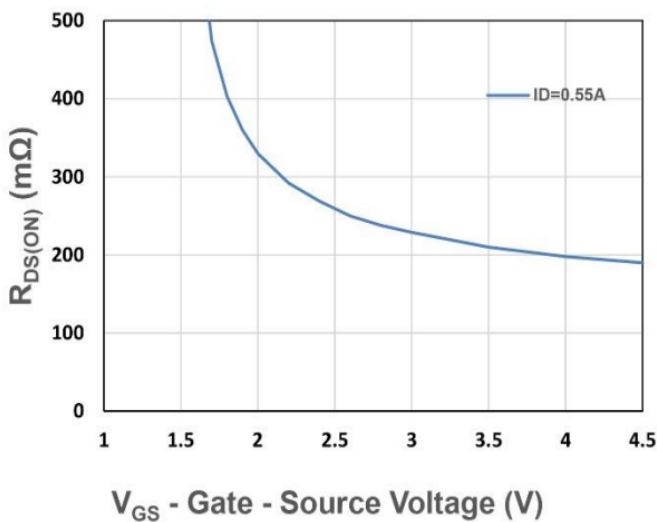


Figure 3. On-Resistance vs. V_{GS}

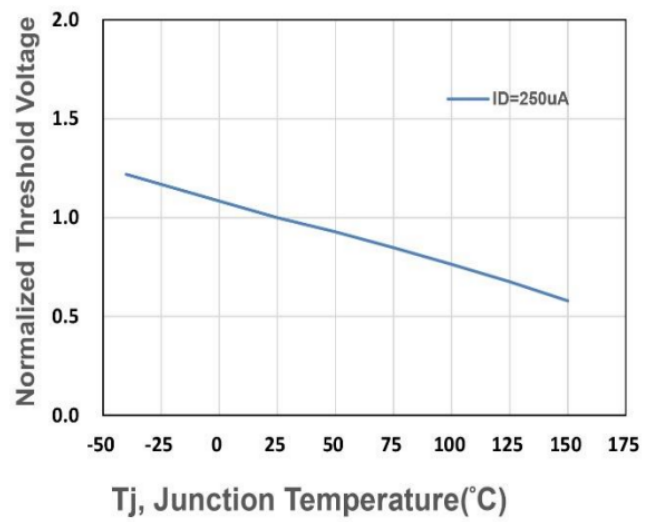


Figure 4. Gate Threshold Voltage

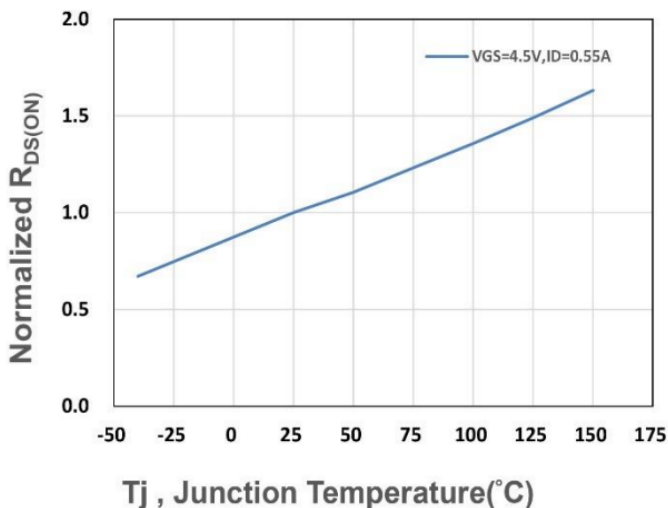


Figure 5. Drain-Source On Resistance

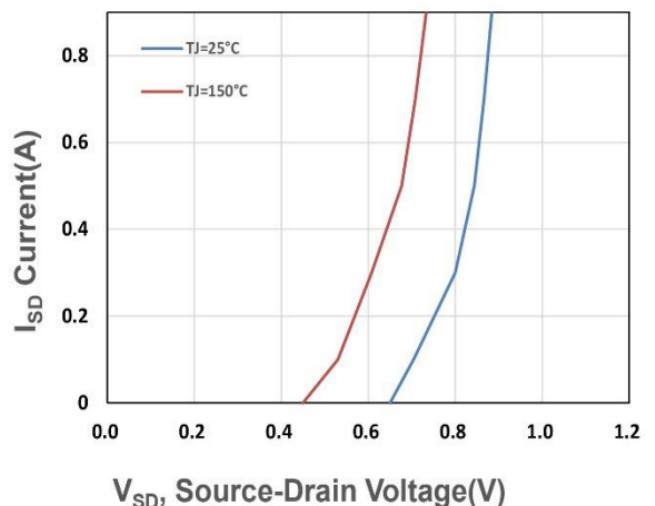
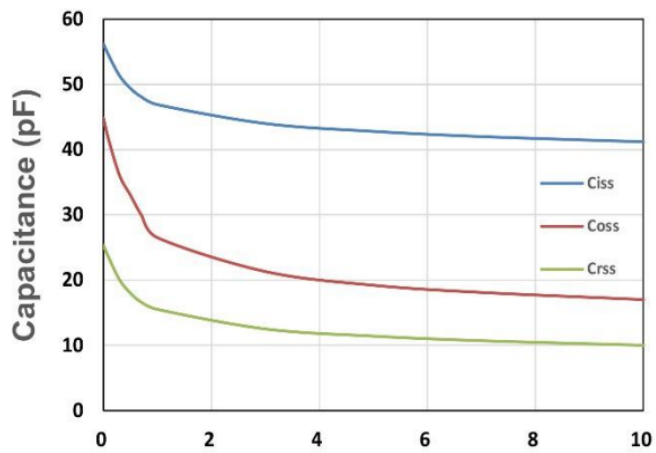
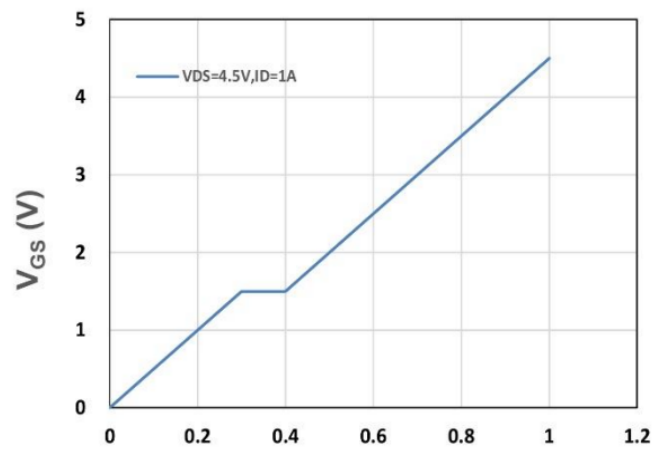


Figure 6. Source-Drain Diode Forward

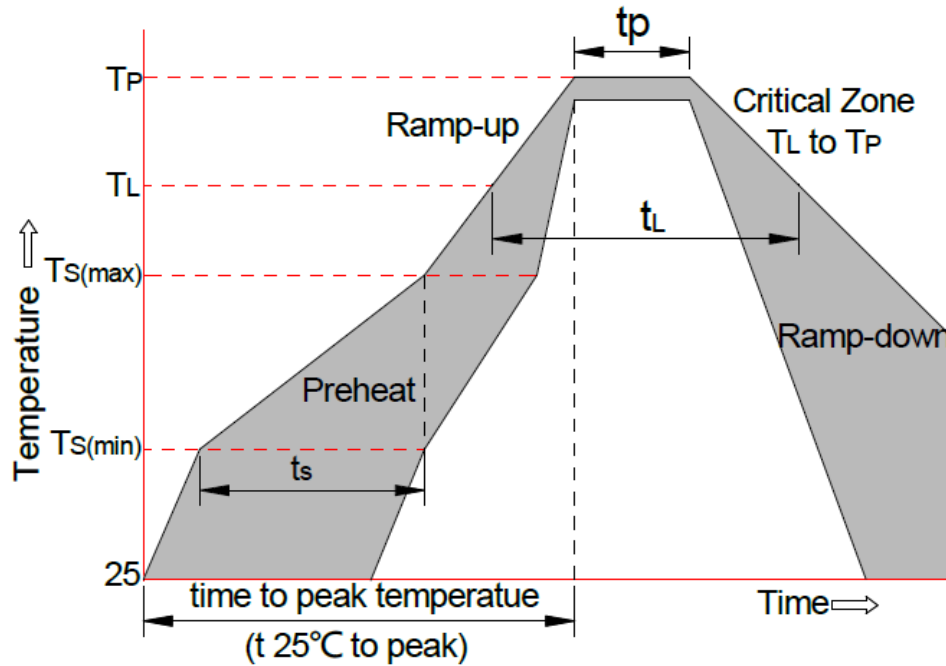


V_{DS} - Drain - Source Voltage (V)
Figure 7. Capacitance



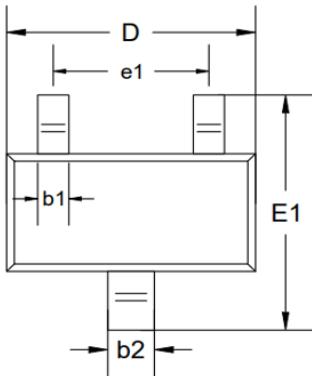
Q_g , Total Gate Charge (nC)
Figure 8. Gate Charge Characteristics

Soldering Parameters

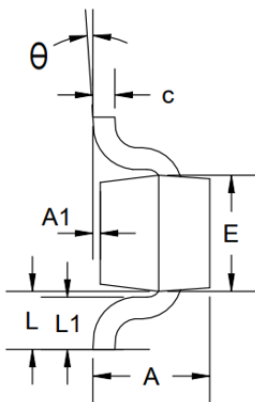


Reflow Conditions		Pb-Free Assembly
Pre-heat	-Temperature Min (Ts (min))	+150°C
	-Temperature Max (Ts (max))	+200°C
	-Time (Min to Max) (ts)	60-180 secs
Average ramp up rate(Liquid us Temp (TL) to peak)		3°C/sec. Max
TS (max) to TL-Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature (TL) (Liquid us)	+217°C
	-Temperature (tL)	60-150 secs
Peak Temp (Tp)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (tp)		30 secs. Max
Ramp-down Rate		6 °C/secs. Max
Time 25°C to Peak Temp (TP)		8 min. Max
Do not exceed		+260°C

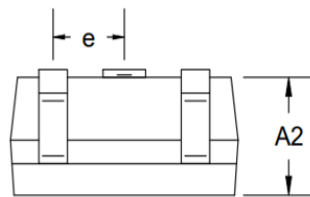
SOT-523 Package Outline Drawing



TOP VIEW



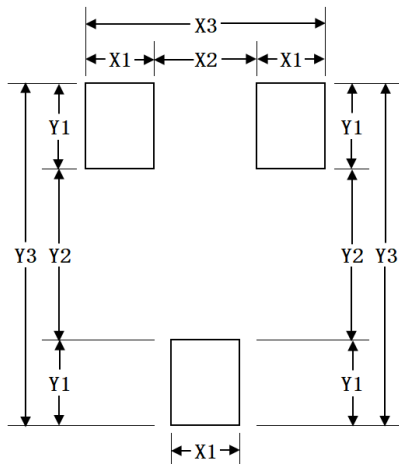
SIDE VIEW



SIDE VIEW

SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	Min	Typ	Max	Min	Typ	Max
A	0.70	0.80	0.90	0.0276	0.0315	0.0354
A1	0.00	0.05	0.10	0.0000	0.0020	0.0039
A2	0.70	0.75	0.80	0.0276	0.0295	0.0315
b1	0.15	0.20	0.25	0.0059	0.0079	0.0098
b2	0.25	0.30	0.35	0.0098	0.0118	0.0138
c	0.10	0.15	0.20	0.0039	0.0059	0.0079
D	1.50	1.60	1.70	0.0591	0.0630	0.0669
E	0.70	0.80	0.90	0.0276	0.0315	0.0354
E1	1.45	1.60	1.75	0.0571	0.0630	0.0689
e	0.50 TYP			0.0197 TYP		
e1	0.90	1.00	1.10	0.0354	0.0394	0.0433
L	0.40 REF			0.0157 REF		
L1	0.26	0.36	0.46	0.0102	0.0142	0.0181
θ	0°	4°	8°	0°	4°	8°

Suggested Pad Layout



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X1	0.40	0.016
X2	0.60	0.024
X3	1.40	0.055
Y1	0.50	0.020
Y2	1.00	0.039
Y3	2.00	0.079