



P-Channel Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY

V _{DSS}	I _D	R _{DS(ON)} (mΩ) Max
-30V	-3.2A	85 @ V _{GS} =-10V
		105 @ V _{GS} =-4.5V

FEATURES

- Super high dense cell design for low R_{DS(ON)}.
- Rugged and reliable.
- Surface Mount Package.



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Symbol	Parameter	Limit	Units	
V _{DS}	Drain-Source Voltage	-30	V	
V _{GS}	Gate-Source Voltage	±20	V	
I _D	Drain Current-Continuous ^c	T _A =25°C	-3.2	A
		T _A =70°C	-2.56	A
I _{DM}	-Pulsed ^{a,c}	-12	A	
P _D	Maximum Power Dissipation	T _A =25°C	1.25	W
		T _A =70°C	0.8	W
T _J , T _{STG}	Operating Junction and Storage Temperature Range	-55 to 150	°C	

THERMAL CHARACTERISTICS

R _{θJA}	Thermal Resistance, Junction-to-Ambient	100	°C/W
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STS3429

Ver 2.0

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-24V, V _{GS} =0V			-1	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} =0V			±100	nA
ON CHARACTERISTICS						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1.0	-1.6	-2.5	V
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-1.6A		55	85	m ohm
		V _{GS} =-4.5V, I _D =-1.4A		80	105	m ohm
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-1.6A		5.6		S
DYNAMIC CHARACTERISTICS ^b						
C _{ISS}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V f=1.0MHz		500		pF
C _{OSS}	Output Capacitance			95		pF
C _{RSS}	Reverse Transfer Capacitance			74		pF
SWITCHING CHARACTERISTICS ^b						
t _{D(ON)}	Turn-On Delay Time	V _{DD} =-15V I _D =-1A V _{GS} =-10V R _{GEN} = 6 ohm		11		ns
t _r	Rise Time			13		ns
t _{D(OFF)}	Turn-Off Delay Time			18		ns
t _f	Fall Time			36		ns
Q _g	Total Gate Charge	V _{DS} =-15V, I _D =-1.6A, V _{GS} =-10V		10		nC
		V _{DS} =-15V, I _D =-1.6A, V _{GS} =-4.5V		5		nC
Q _{gs}	Gate-Source Charge	V _{DS} =-15V, I _D =-1.6A,		0.83		nC
Q _{gd}	Gate-Drain Charge	V _{GS} =-10V		2.85		nC
DRAIN-SOURCE DIODE CHARACTERISTICS						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =-1A		-0.8	-1.2	V

Notes

- a. Pulse Test: Pulse Width < 10us, Duty Cycle < 1%.
- b. Guaranteed by design, not subject to production testing.
- c. Drain current limited by maximum junction temperature.
- d. Mounted on FR4 Board of 1 inch², 2oz.

Dec,24,2014

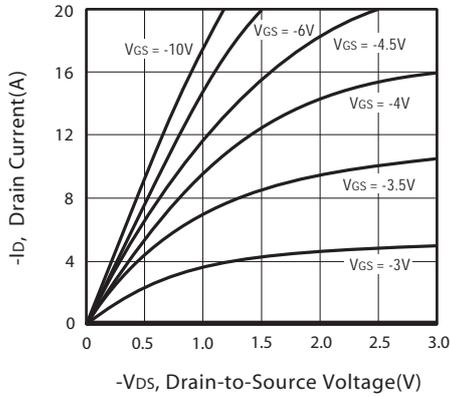


Figure 1. Output Characteristics

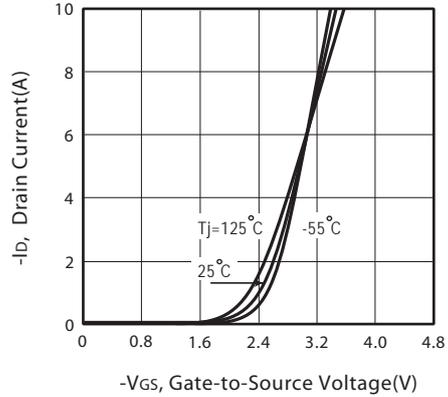


Figure 2. Transfer Characteristics

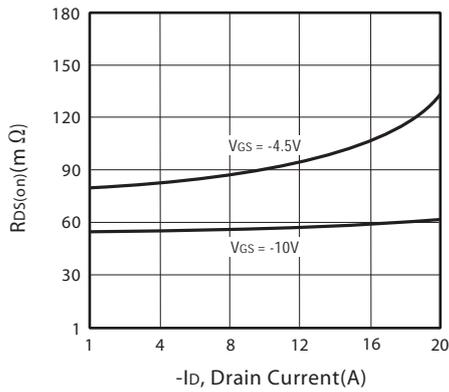


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

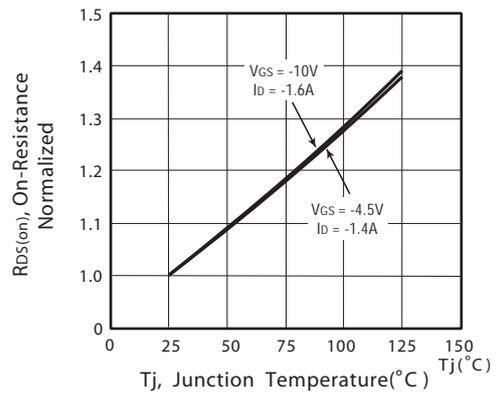


Figure 4. On-Resistance Variation with Drain Current and Temperature

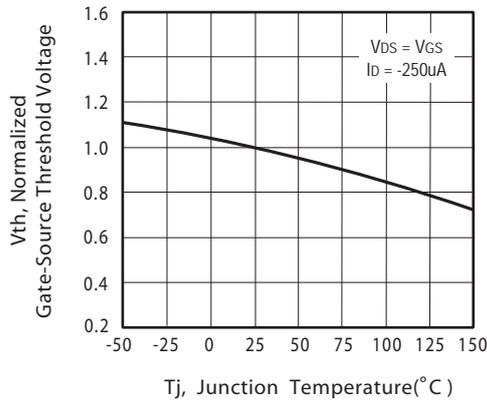


Figure 5. Gate Threshold Variation with Temperature

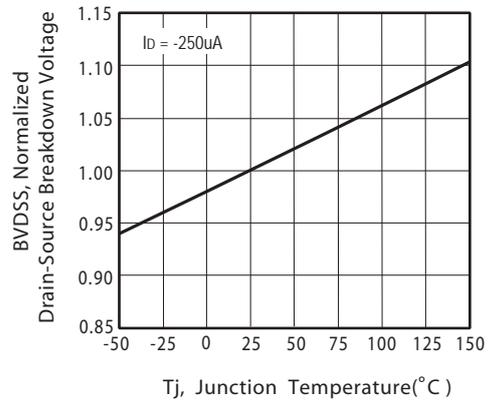


Figure 6. Breakdown Voltage Variation with Temperature

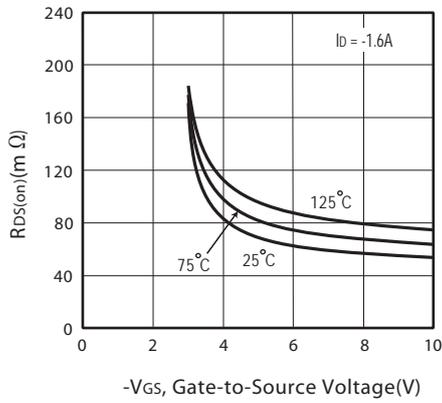


Figure 7. On-Resistance vs. Gate-Source Voltage

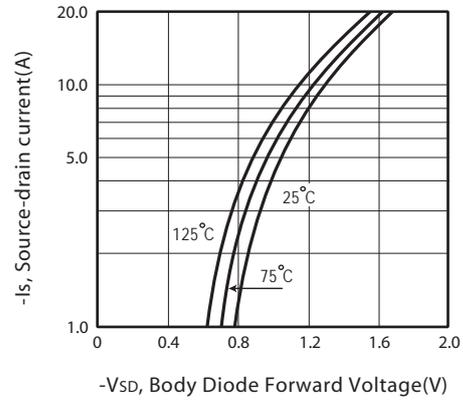


Figure 8. Body Diode Forward Voltage Variation with Source Current

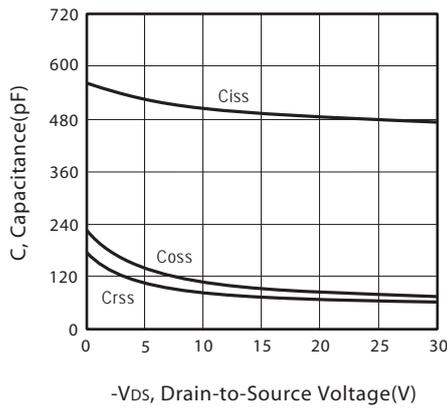


Figure 9. Capacitance

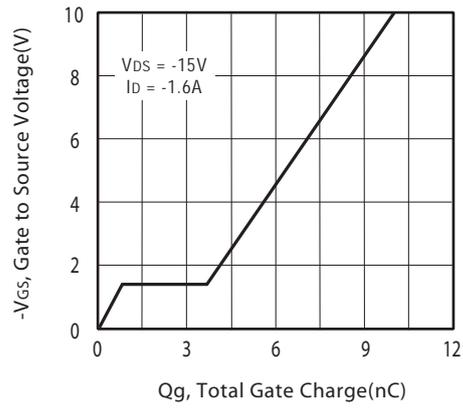


Figure 10. Gate Charge

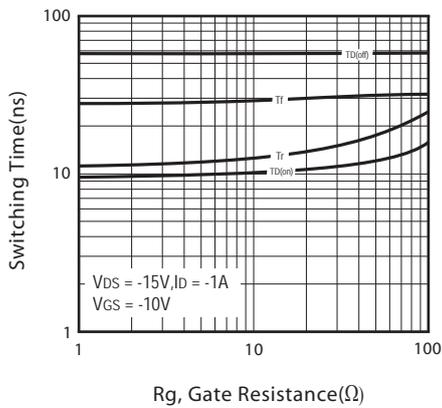


Figure 11. switching characteristics

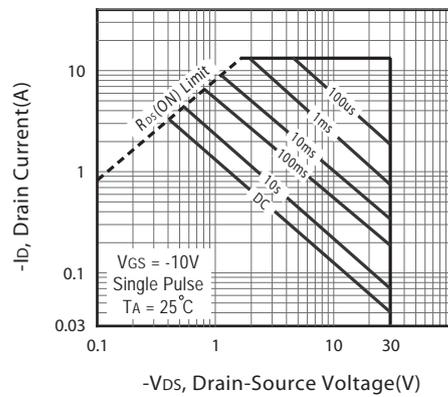


Figure 12. Maximum Safe Operating Area

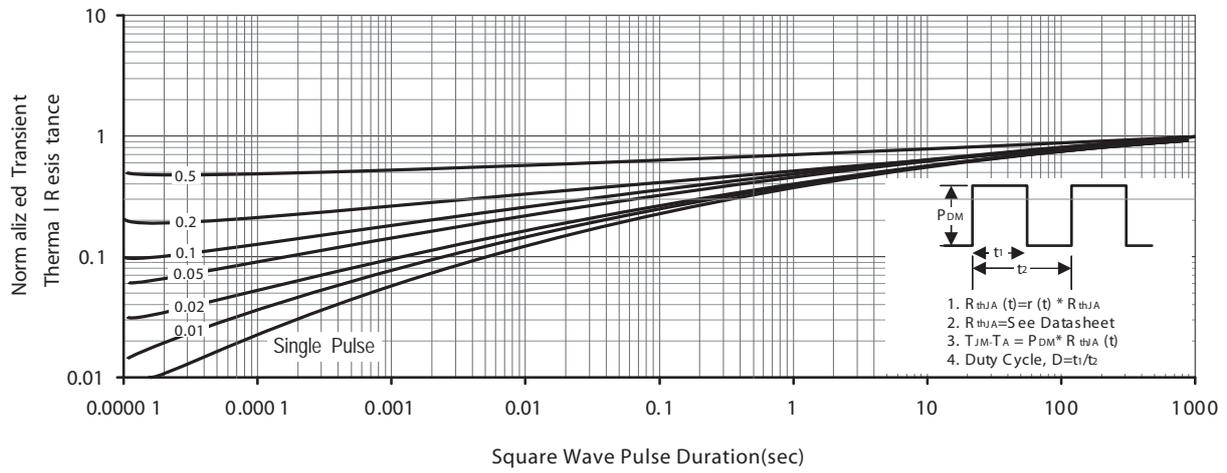
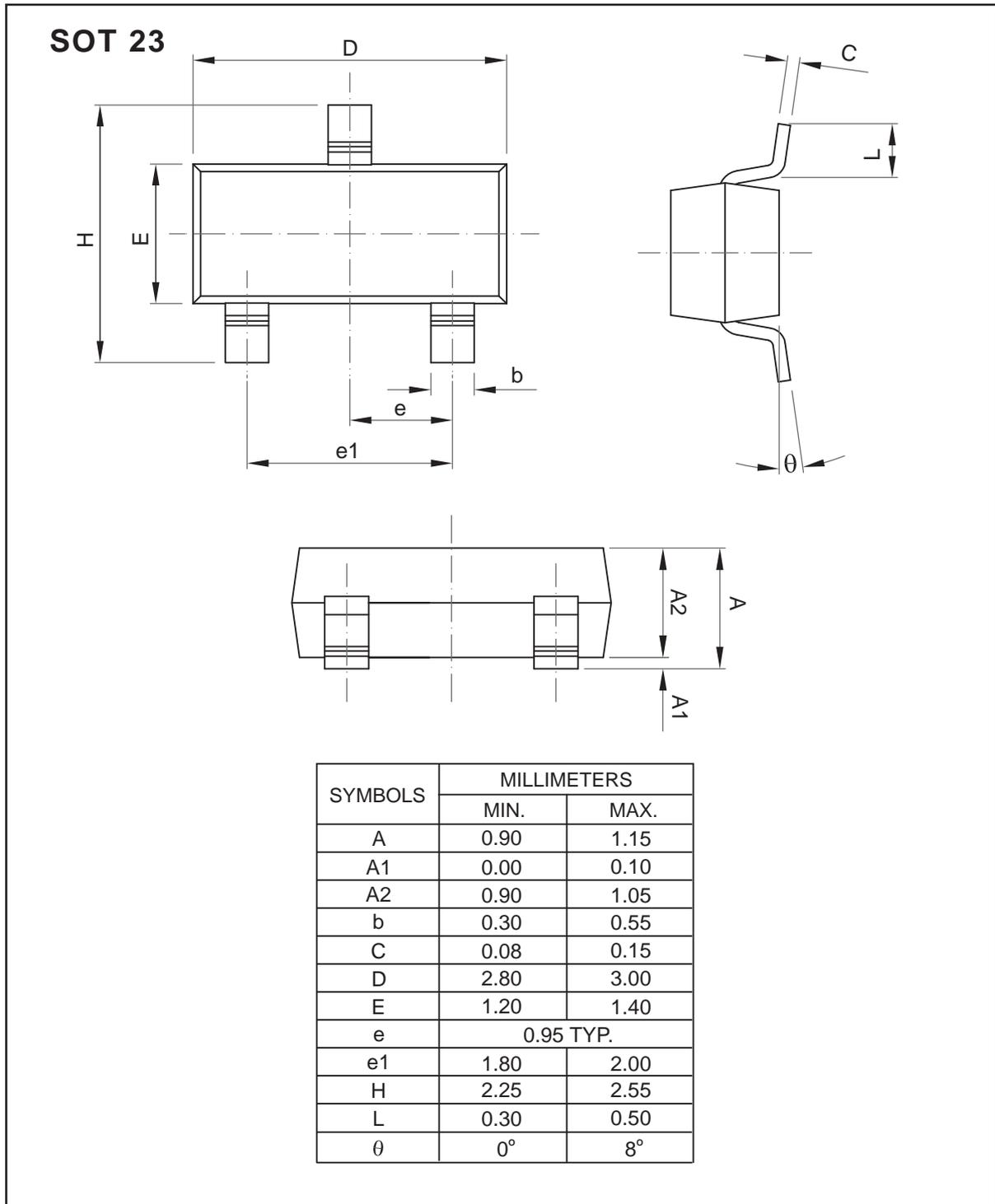


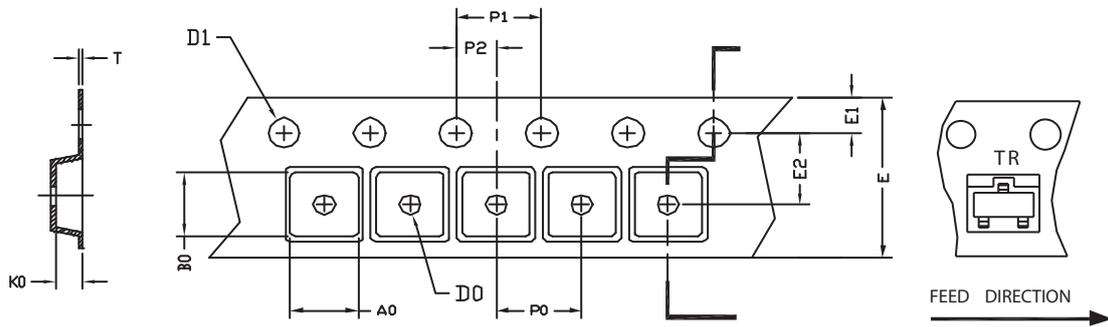
Figure 13. Normalized Thermal Transient Impedance Curve

PACKAGE OUTLINE DIMENSIONS



SOT23 Tape and Reel Data

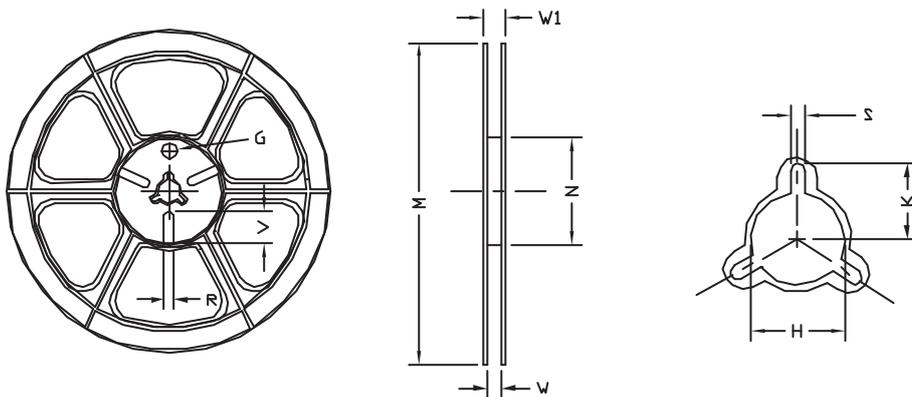
SOT23-3L Carrier Tape



UNIT:mm

PACKAGE	A0	B0	K0	D0	D1	E	E1	E2	P0	P1	P2	T
SOT23-3L	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	ϕ 1.00 $+0.05$	ϕ 1.50 $+0.10$	8.00 $+0.30$ -0.10	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.22 ± 0.04

SOT23-3L Reel



UNIT:mm

TAPE SIZE	REEL SIZE	M	N	W	W1	H	K	S	G	R	V
8mm	ϕ 178	ϕ 178 ± 1	ϕ 60 ± 1	9.00 ± 0.5	12.00 ± 0.5	ϕ 13.5 ± 0.5	10.5	2.00 ± 0.5	ϕ 10.0	5.00	18.00

TOP MARKING DEFINITION

