

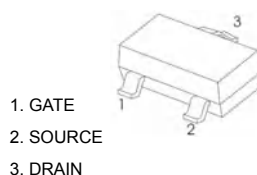
FEATURES

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

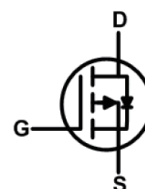
V_{DSS} -30 V
 I_D -4.1 A
 $R_{DS(ON)}$ 48 m Ω

A79T

SOT-23



Equivalent Circuit



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	-4.1	A
Drain Current-Pulsed ^(Note 1)	I_{DM}	-20	A
Maximum Power Dissipation	P_D	1.2	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^\circ\text{C}$

Thermal Characteristic

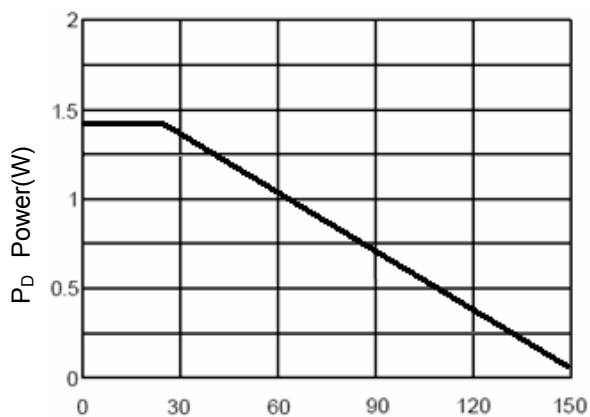
Thermal Resistance, Junction-to-Ambient ^(Note 2)	$R_{\theta JA}$	90	$^\circ\text{C}/\text{W}$
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Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

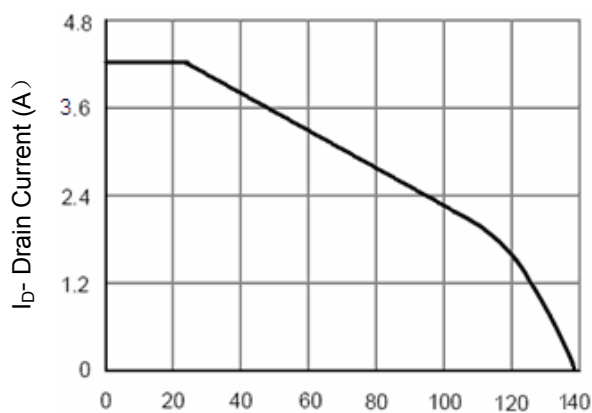
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-30	-33	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24V, V_{GS}=0V$	-	-	-1	μA

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.5	-3	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-4.1A	-	48	65	mΩ
		V _{GS} =-4.5V, I _D =-4A	-	60	95	mΩ
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-4.1A	5.5	-	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, F=1.0MHz	-	650	-	PF
Output Capacitance	C _{oss}		-	105	-	PF
Reverse Transfer Capacitance	C _{rss}		-	65	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-15V, R _L =3.6Ω V _{GS} =-10V, R _{GEN} =3Ω	-	8.5	-	nS
Turn-on Rise Time	t _r		-	4.5	-	nS
Turn-Off Delay Time	t _{d(off)}		-	26	-	nS
Turn-Off Fall Time	t _f		-	12.5	-	nS
Total Gate Charge	Q _g	V _{DS} =-15V, I _D =-4A, V _{GS} =-10V	-	12.5	-	nC
Gate-Source Charge	Q _{gs}		-	2.8	-	nC
Gate-Drain Charge	Q _{gd}		-	2.7	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V, I _S =-4.1A	-	-	-1.2	V

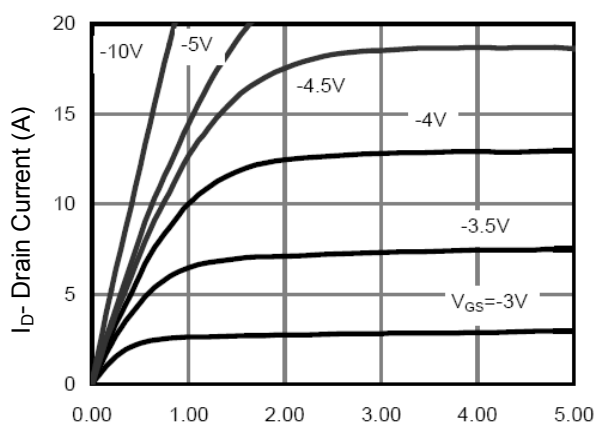
RATING AND CHARACTERISTIC CURVES



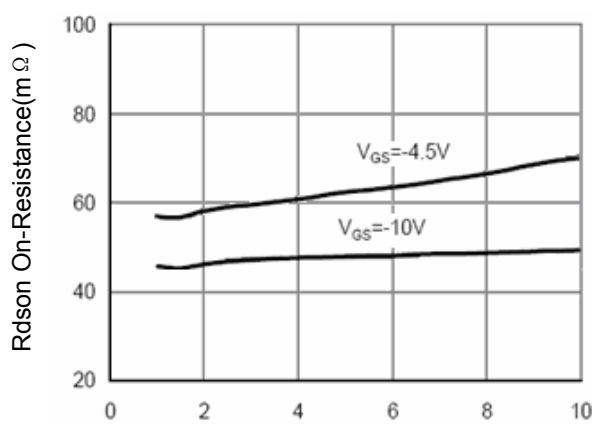
T_J-Junction Temperature(°C)
Figure 1 Power Dissipation



T_J-Junction Temperature(°C)
Figure 2 Drain Current



V_{DS} Drain-Source Voltage (V)
Figure 3 Output Characteristics



I_D- Drain Current (A)
Figure 4 Drain-Source On-Resistance

RATING AND CHARACTERISTIC CURVES

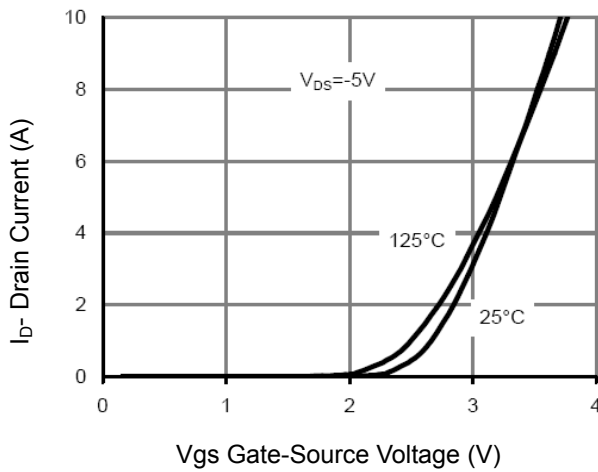


Figure 5 Transfer Characteristics

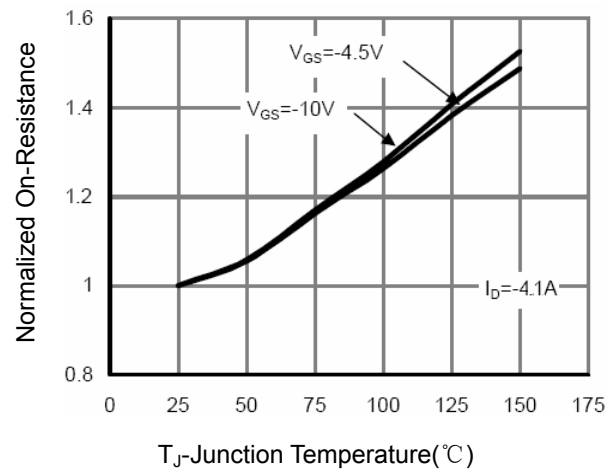


Figure 6 Drain-Source On-Resistance

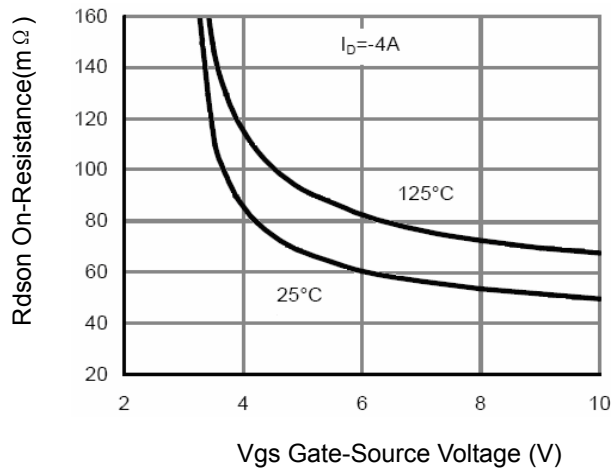


Figure 7 $R_{DS(on)}$ vs V_{GS}

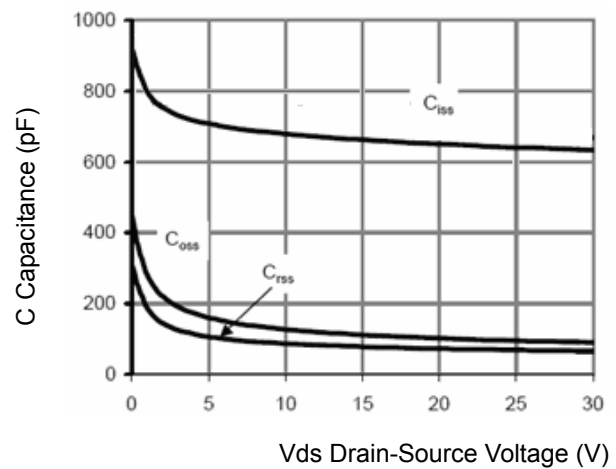


Figure 8 Capacitance vs V_{DS}

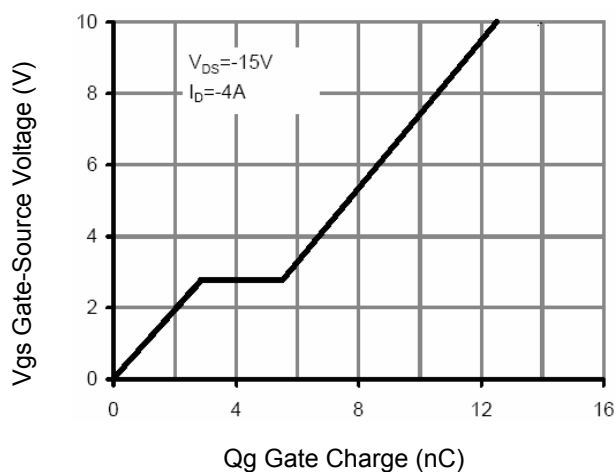


Figure 9 Gate Charge

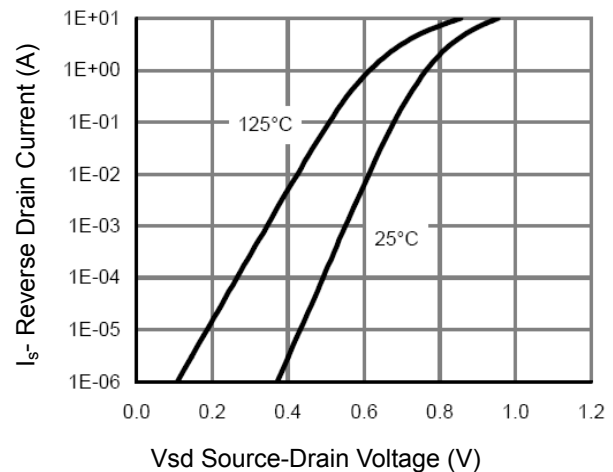
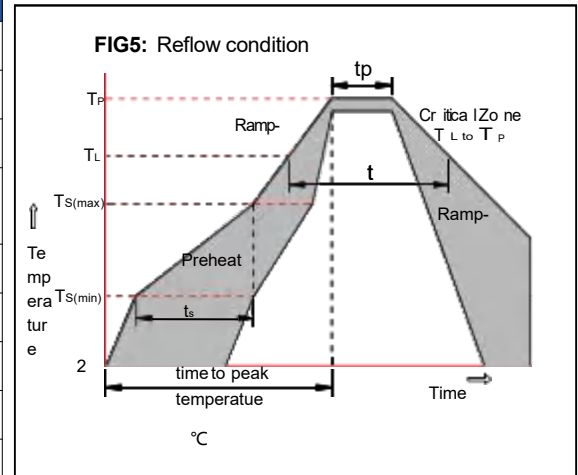


Figure 10 Source- Drain Diode Forward

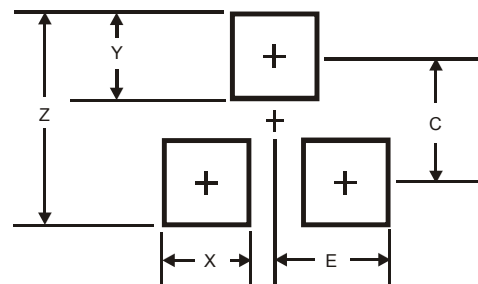
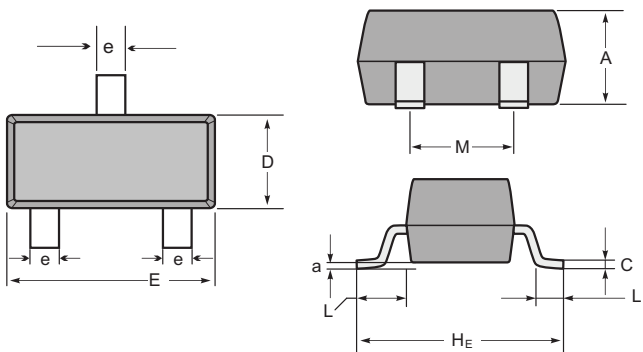
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



Package Dimensions & Suggested Pad Layout

SOT23



SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

