

Features

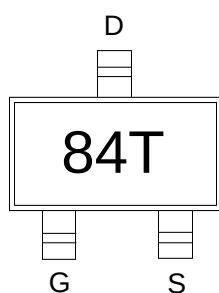
- Advanced trench cell design
- High speed switch
- Low Gate Charge

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-50V	5Ω@-10V	-0.13A
	6Ω@-5V	

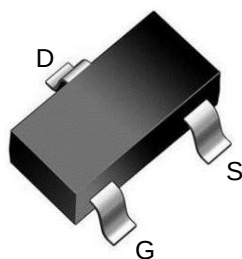
Application

- Portable appliances
- Video monitor

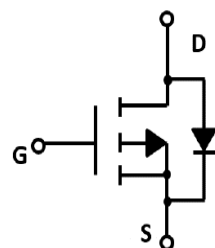


84T: Device code

Marking and pin assignment



SOT-523 top view



Schematic diagram



Pb-Free



RoHS



Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
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Common Ratings (TC=25°C Unless Otherwise Noted)

V_{DS}	Drain-Source Breakdown Voltage	-50	V
V_{GS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 150	°C
I_S	Diode Continuous Forward Current	$T_c=25^{\circ}\text{C}$ -0.13	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^{\circ}\text{C}$ -0.68	A
I_D	Continuous Drain Current@GS=10V	$T_c=25^{\circ}\text{C}$ -0.13	A
P_D	Maximum Power Dissipation	$T_c=25^{\circ}\text{C}$ 0.225	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	556	°C/W

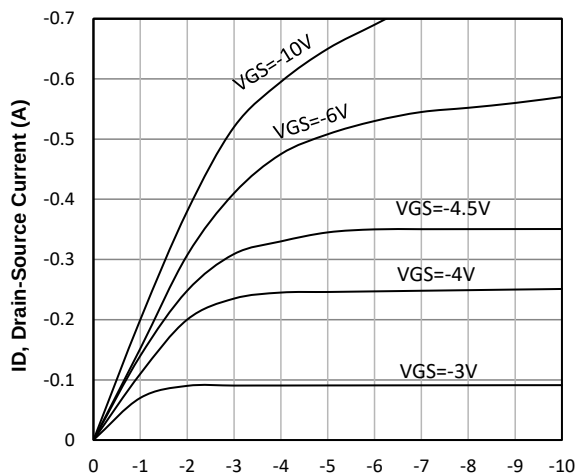
Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
FS5084	SOT-523	84T	3,000	45,000	180,000	7"reel

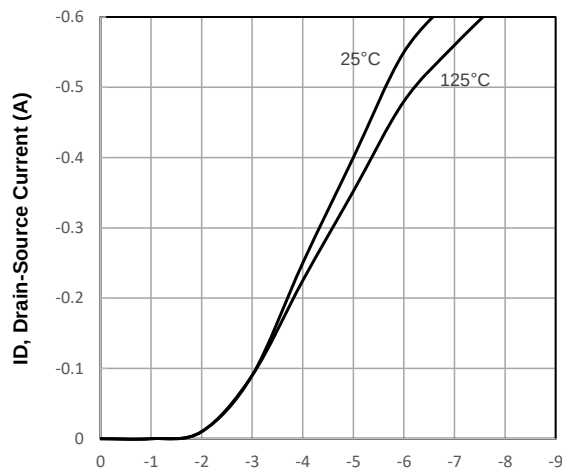
**Electrical Characteristics (T_J=25°C unless otherwise noted)**

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-50	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=-50V, VGS=0V	--	--	-1.0	uA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.0	--	-2.0	V
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-0.1A	--	4.0	5.0	Ω
		VGS=-4.5V, ID=-0.1A	--	4.2	6.0	Ω
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=-30V, VGS=0V, f=1MHz	--	30	--	pF
COSS	Output Capacitance		--	10	--	pF
CRSS	Reverse Transfer Capacitance		--	5	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDD=-30V, ID=-0.15A, VGS=-4.5V	--	1.77	--	nC
Qgs	Gate Source Charge		--	0.57	--	nC
Qgd	Gate Drain Charge		--	0.18	--	nC
td(on)	Turn-on Delay Time	VDD=-30V, ID=-0.15A, VGS=-4.5V, RG=2.5Ω	--	2.5	--	nS
tr	Turn-on Rise Time		--	1	--	nS
td(off)	Turn-Off Delay Time		--	16	--	nS
tf	Turn-Off Fall Time		--	8	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25°C, Is=-0.1A,	--	--	-1.2	V

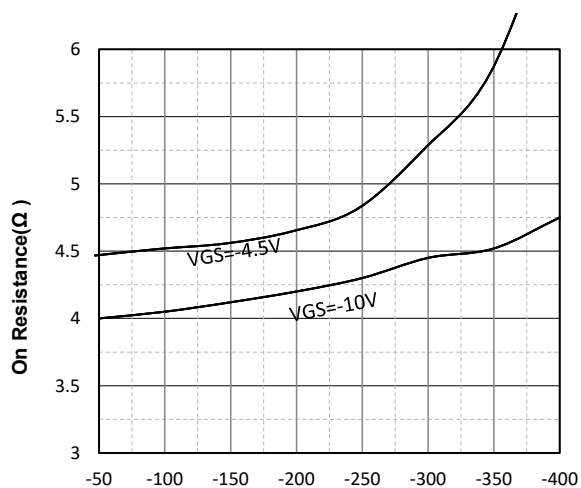
Typical Operating Characteristics



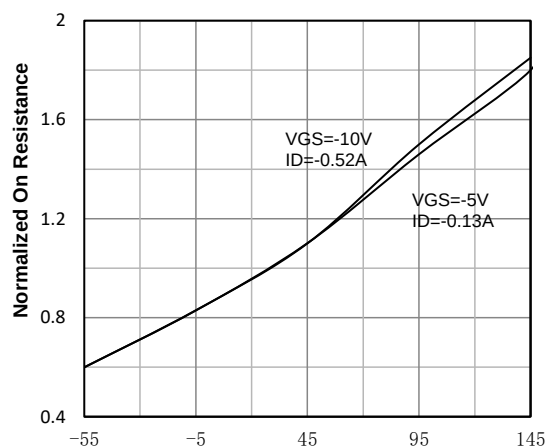
VDS, Drain-Source Voltage (V)
Fig1. Typical Output Characteristics



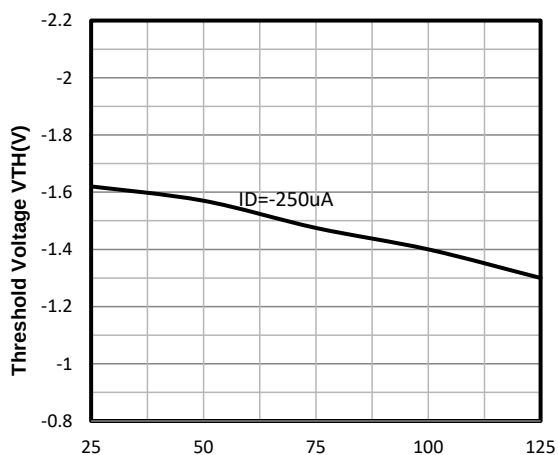
VGS(TH), Gate-Source Voltage (V)
Fig2. Typical Transfer Characteristics



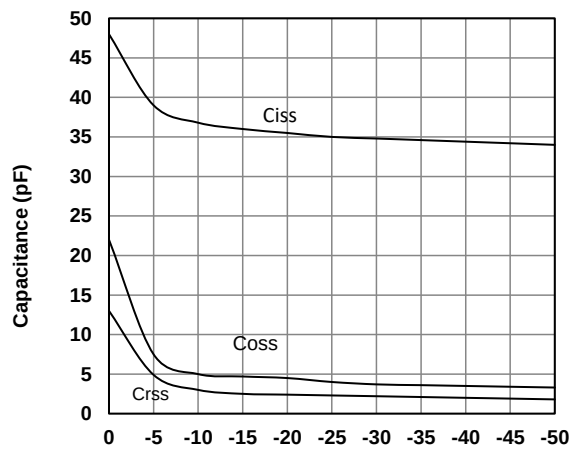
ID, Drain-Source Current (mA)
Fig3. Drain-Source on Resistance



Tj - Junction Temperature (°C)
Fig4. Normalized On-Resistance Vs. Temperature



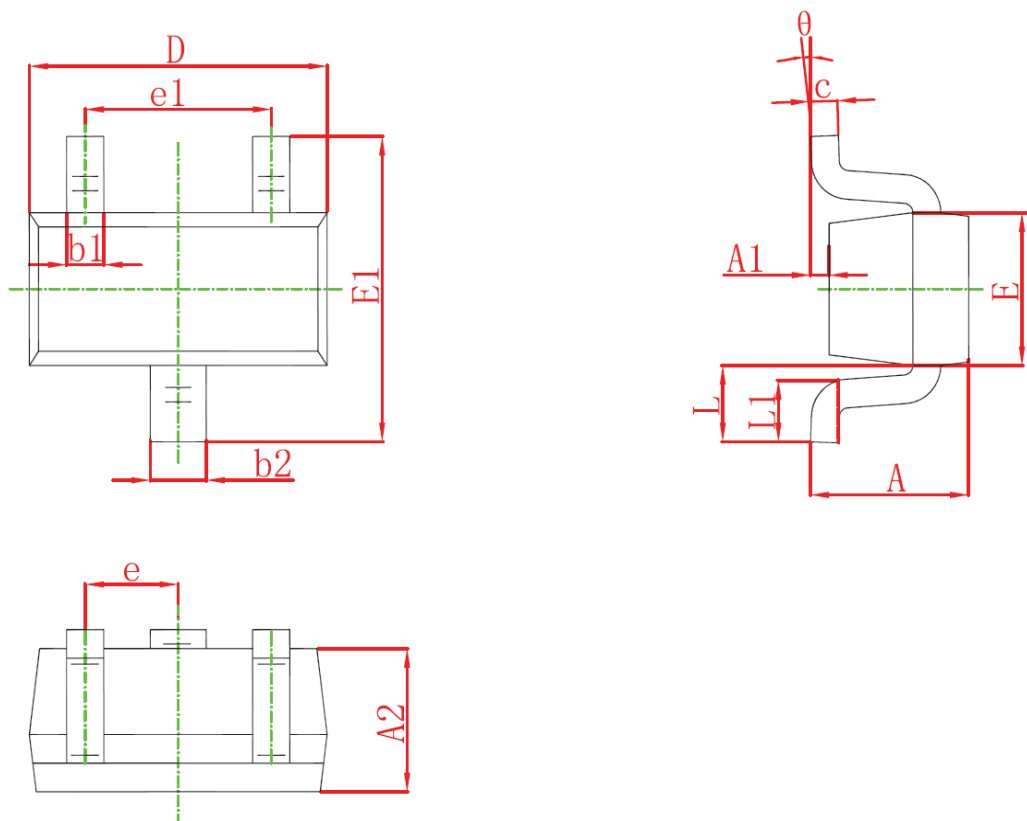
Tj - Junction Temperature (°C)
Fig5. Gate Threshold vs. Junction Temperature



VDS, Drain-Source Voltage (V)
Fig6. Typical Capacitance Vs. Drain-Source Voltage



SOT-523 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500TYP		0.020TYP	
e1	0.900	1.100	0.035	0.043
L	0.400REF		0.016REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°