

20V P-Channel Power MOSFET

UM8517P SOT323

UM8517P6 SOT363

General Description

The UM8517P/UM8517P6 are low threshold P-channel MOSFETs, having extremely low on-resistance. This benefit provides the designer with an extremely efficient device for use in battery and load management applications. The UM8517P uses a space-saving, small-outline SOT323 package while UM8517P6 uses a space-saving, small-outline SOT363 package.

Applications

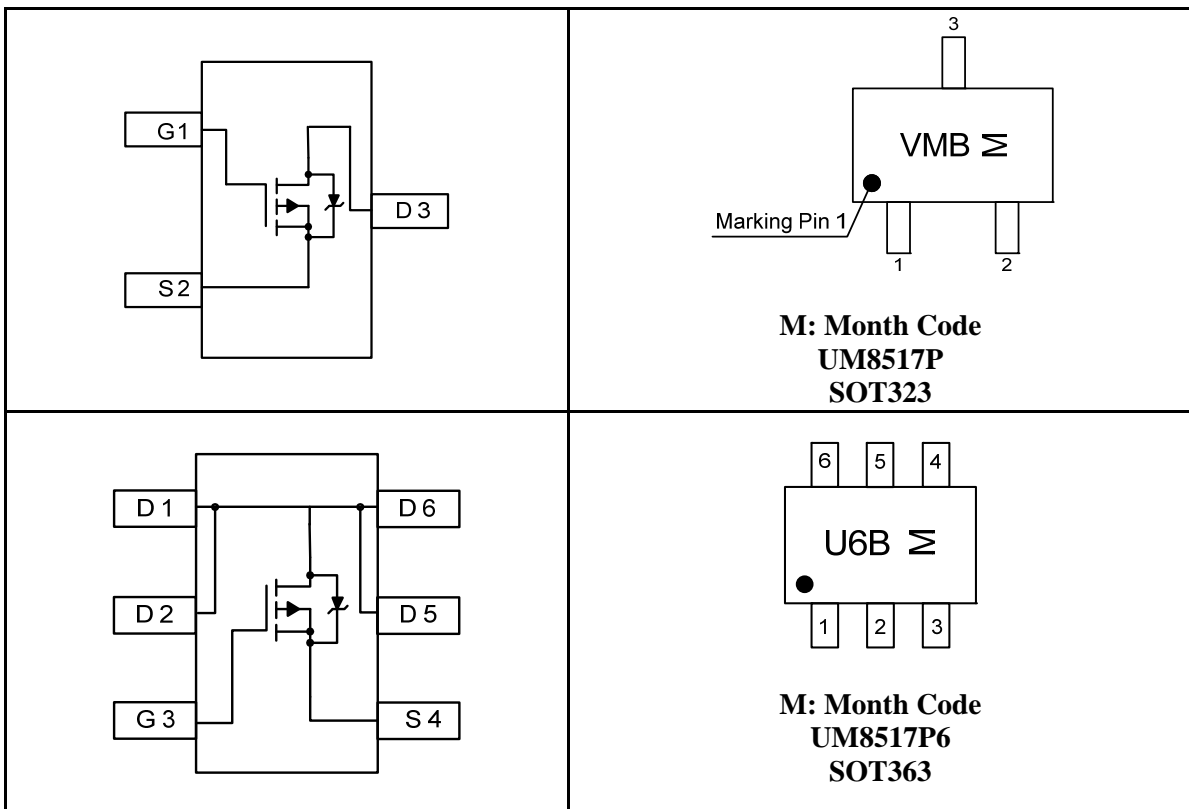
- Battery Packs
- Battery-Powered Portable Equipments
- Cellular and Cordless Telephones

Features

- Drain-Source Voltage (Max): -20V
- Low On-Resistance:
90mΩ@V_{GS}=-4.5V
130mΩ@V_{GS}=-2.5V
- Continuous Drain Current (Max):
-1.4A@25°C

Pin Configurations

Top View



Ordering Information

Part Number	Packaging Type	Marking Code	Shipping Qty
UM8517P	SOT323	VMB	3000pcs/7 Inch Tape & Reel
UM8517P6	SOT363	U6B	3000pcs/7 Inch Tape & Reel

Absolute Maximum Ratings

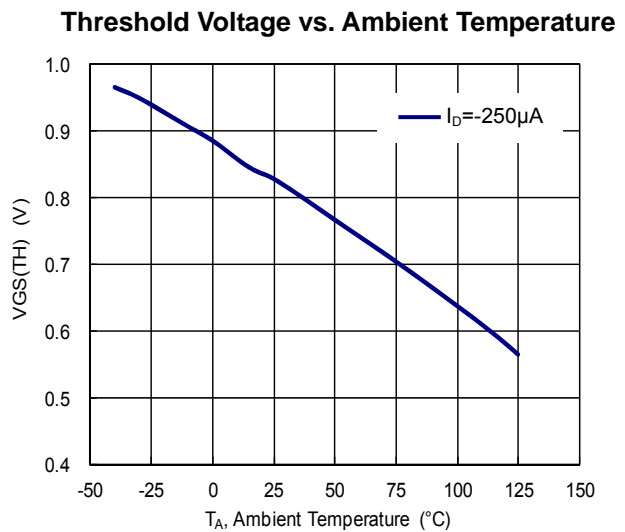
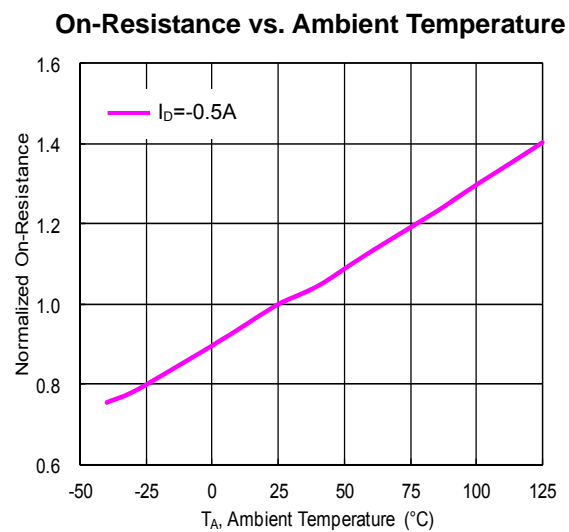
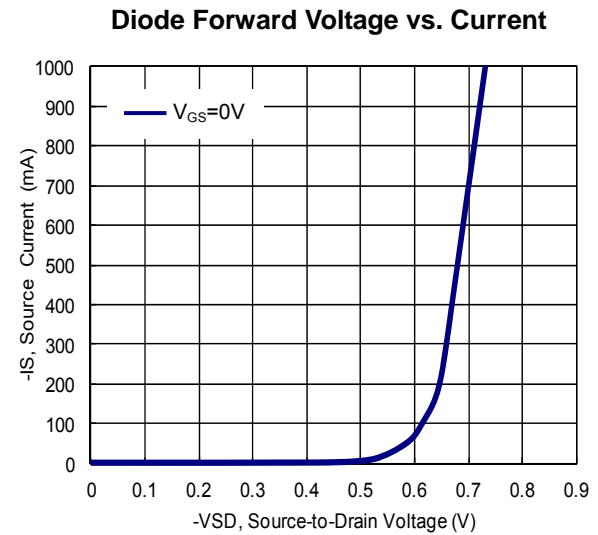
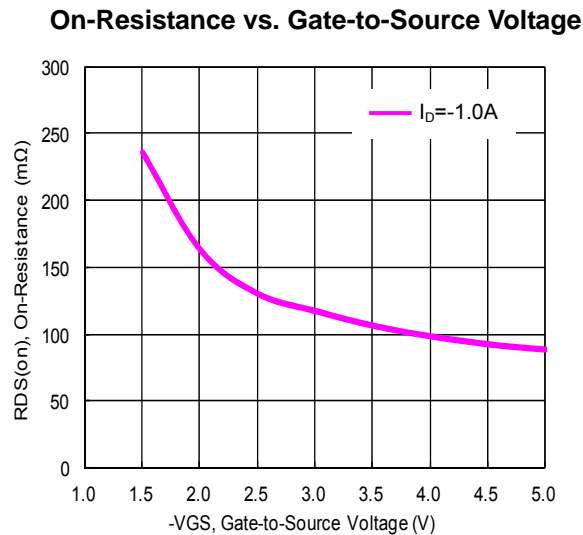
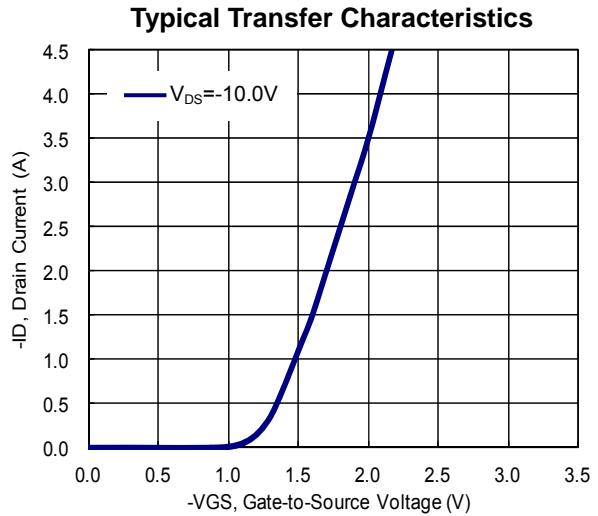
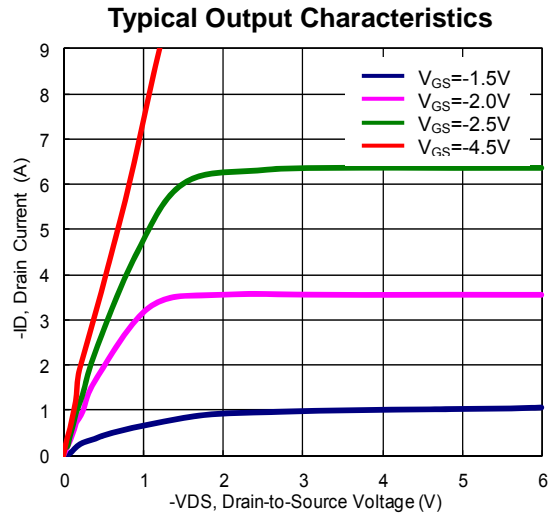
Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Continuous Drain Current	-1.4	A
I_{DM}	Drain Current Pulsed	-3.0	A
P_D	Power Dissipation	0.3	W
T_J	Junction Temperature	-55~150	$^{\circ}C$
T_{STG}	Storage Temperature	-55~150	$^{\circ}C$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	330	$^{\circ}C/W$

Electrical Characteristics

 (T_J=25°C, unless otherwise noted)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
Off Characteristics						
BV _{DSS}	Drain to Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-20			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-20V, V _{GS} =0V			-1	μA
I _{GSS}	Gate-to-Source Leakage Current	V _{GS} =±12V, V _{DS} =0V			±100	nA
On Characteristics						
R _{DS(ON)}	Static Drain-to-Source On-Resistance	V _{GS} =-4.5V, I _D =-1.0A		90	110	mΩ
		V _{GS} =-2.5V, I _D =-0.5A		130	150	
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D =-250μA	-0.4	-0.7	-1	V
g _{fs}	Forward Transconductance	V _{DS} =-5V, I _D =-2.0A		6		S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-15V, f=1.0MHz		405		pF
C _{oss}	Output Capacitance			75		
C _{rss}	Reverse Transfer Capacitance			55		
Switching Characteristics						
Q _{g(TH)}	Threshold Gate Charge	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-1.0A		3.3		nC
Q _{GS}	Gate-Source Charge			0.7		
Q _{GD}	Gate-Drain Charge			1.3		
td(on)	Turn-on Delay Time	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-1.0A R _{GEN} =10Ω		11		ns
tr	Rise Time			35		
td(off)	Turn-off Delay Time			30		
tf	Fall Time			10		
Drain-Source Diode Characteristics and Maximum Ratings						
V _{SD}	Forward Diode Voltage	V _{GS} =0V, I _S =-1A		-0.7	-1.2	V

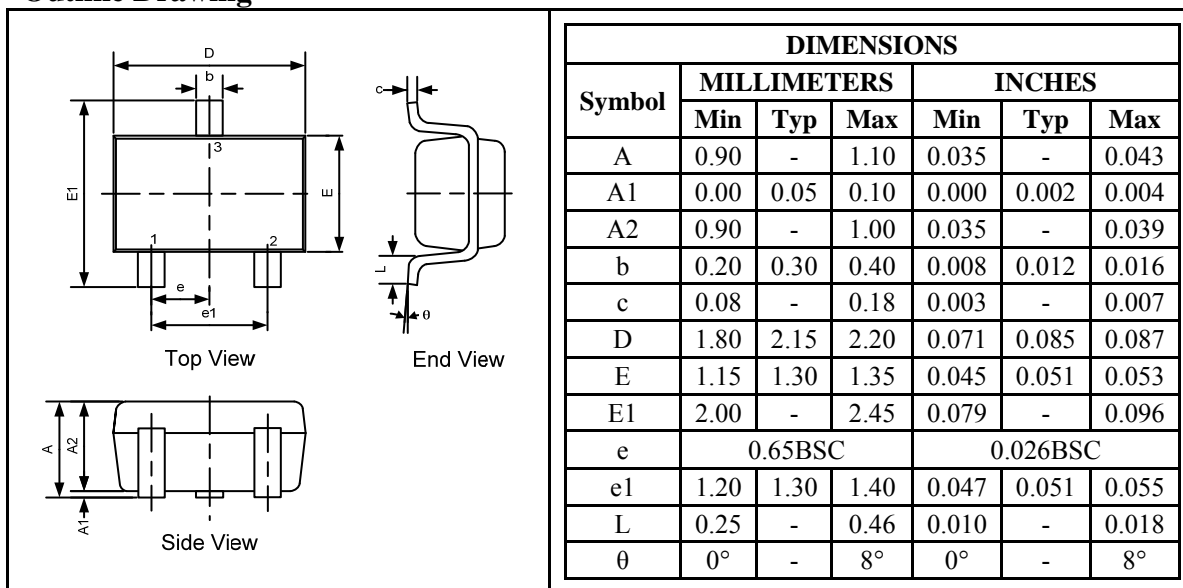
Typical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)



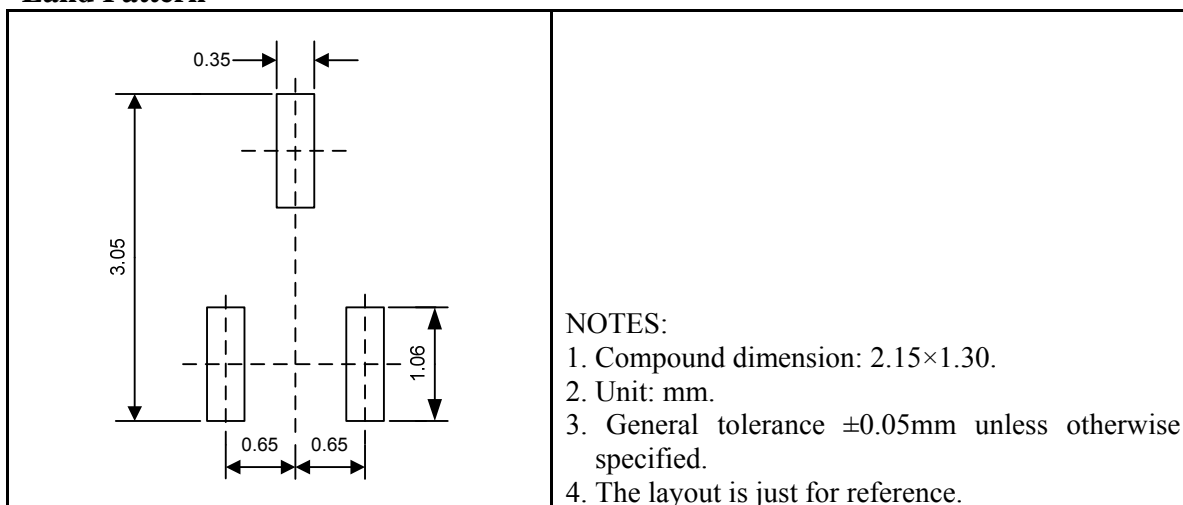
Package Information

UM8517P SOT323

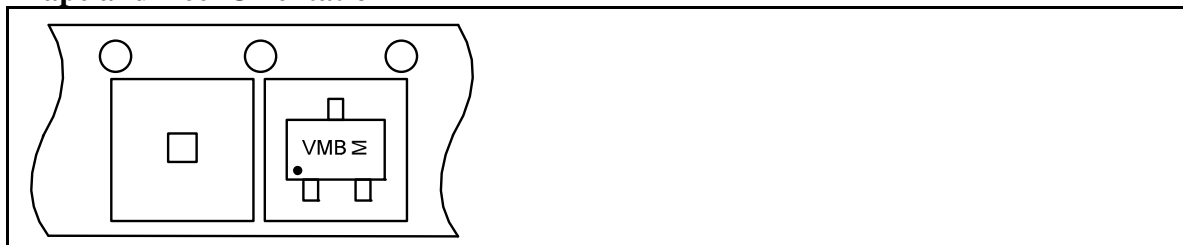
Outline Drawing



Land Pattern

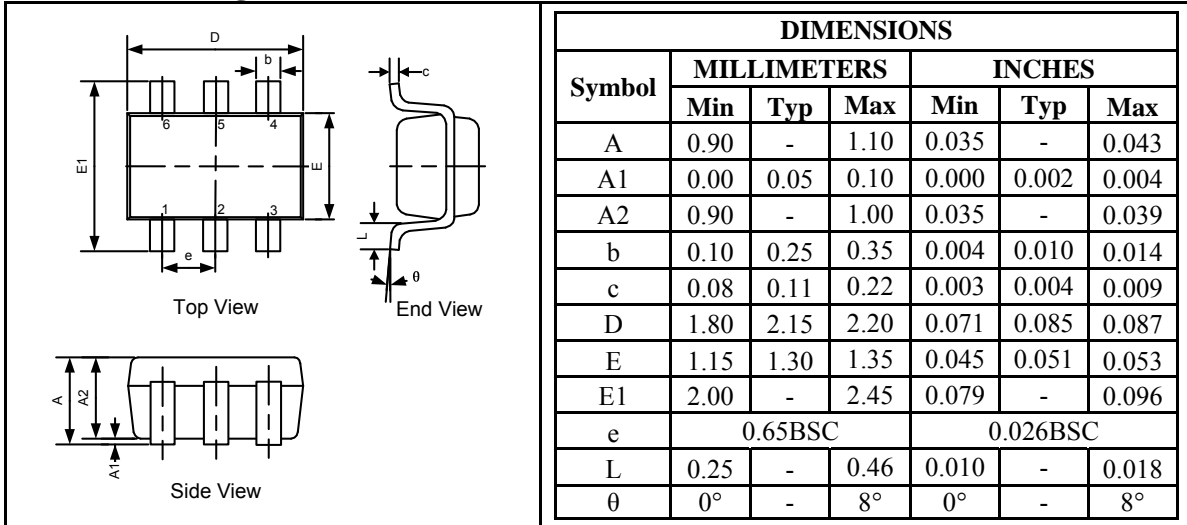


Tape and Reel Orientation

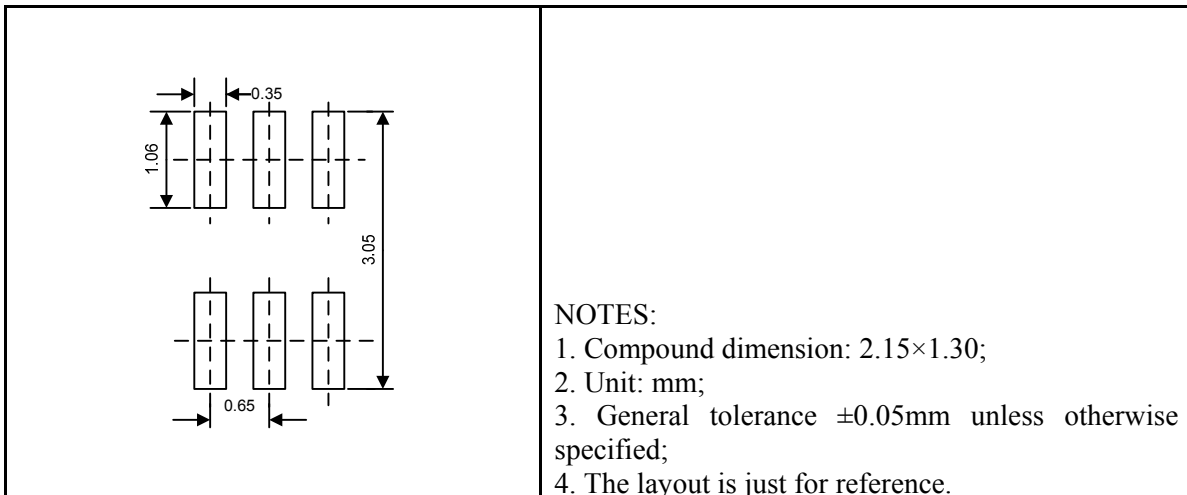


UM8517P6 SOT363

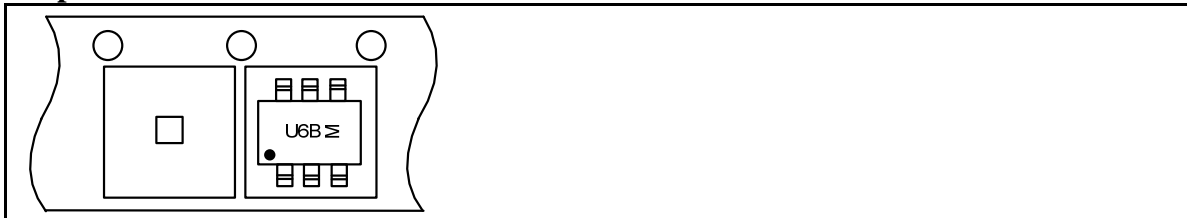
Outline Drawing



Land Pattern



Tape and Reel Orientation



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