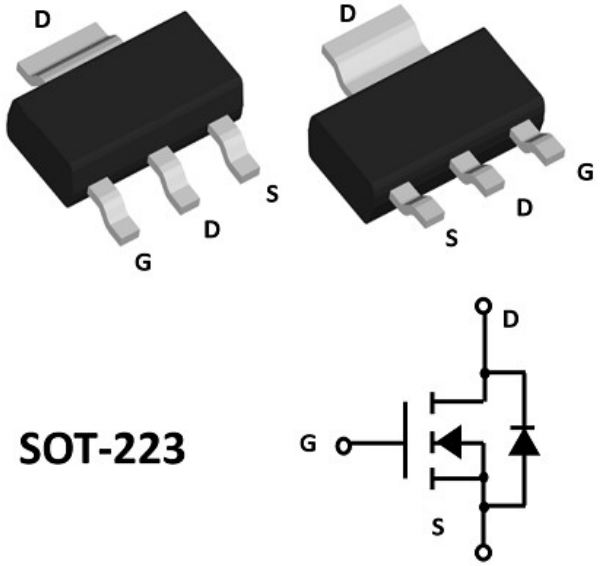
N-Channel Enhancement Mode Field Effect Transistor



SOT-223

Product Summary

- V_{DS} 60V
- I_D 5.0A
- $R_{DS(ON)}$(at V_{GS}=10V) ＜100 mohm
- $R_{DS(ON)}$(at V_{GS}=4.5V) ＜120 mohm

General Description

- Trench Power MV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$

Applications

- DC-DC Converters
- Power management functions

■ **Absolute Maximum Ratings** (T_A=25℃unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	60	V
Gate-source Voltage	V_{GS}	±20	V
Drain Current	I_D	5.0	A
Pulsed Drain Current [A]	I_{DM}	12	A
Total Power Dissipation @ T_C=25℃	P_D	1.2	W
Thermal Resistance Junction-to-Ambient [B]	$R_{\theta JA}$	105	℃/ W
Junction and Storage Temperature Range	T_J ,T_{STG}	-55～+150	℃

■ Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=250μA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V,V_{GS}=0V			1	μA
Gate-Body Leakage Current	I_{GSS1}	V_{GS}= ±20V, V_{DS}=0V			±100	nA
	I_{GSS2}	V_{GS}= ±10V, V_{DS}=0V			±50	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=250μA	1.0	1.7	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= 10V, I_D=3A		65	100	mΩ
		V_{GS}= 4.5V, I_D=1.5A		78	120	
Diode Forward Voltage	V_{SD}	I_S=3.0A,V_{GS}=0V		0.8	1.2	V
Maximum Body-Diode Continuous Current	I_S				3.0	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=30V,V_{GS}=0V,f=1MHZ		330		pF
Output Capacitance	C_{oss}			90		
Reverse Transfer Capacitance	C_{rss}			17		
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=10V,V_{DS}=30V,I_D=3.0A		5.1		nC
Gate-Source Charge	Q_{gs}			1.3		
Gate-Drain Charge	Q_{gd}			1.7		
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=10V,V_{DD}=30V, I_D=1.5A,R_L=1Ω R_{GEN}=3Ω		13		ns
Turn-on Rise Time	t_r			51		
Turn-off Delay Time	$t_{D(off)}$			19		
Turn-off fall Time	t_f			12		

A. Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.
B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

■ Typical Performance Characteristics

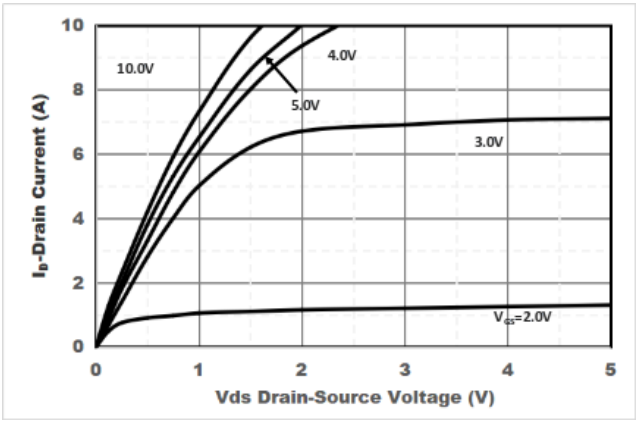


Figure1. Output Characteristics

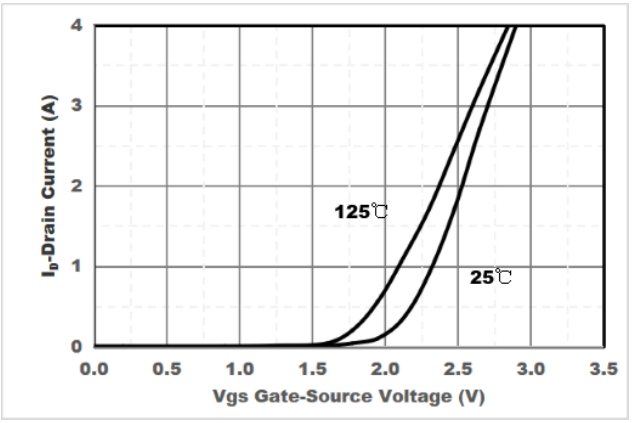


Figure2. Transfer Characteristics

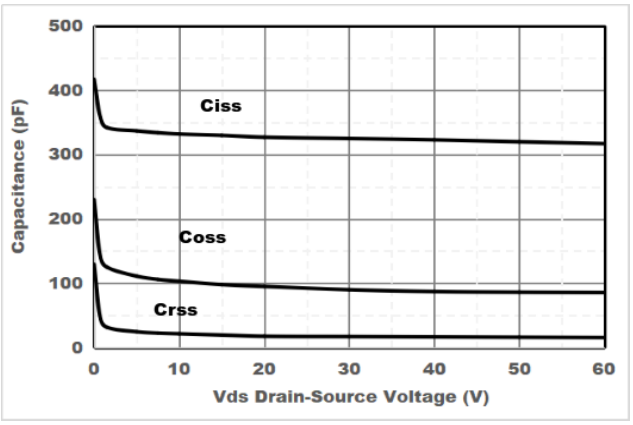


Figure3. Capacitance Characteristics

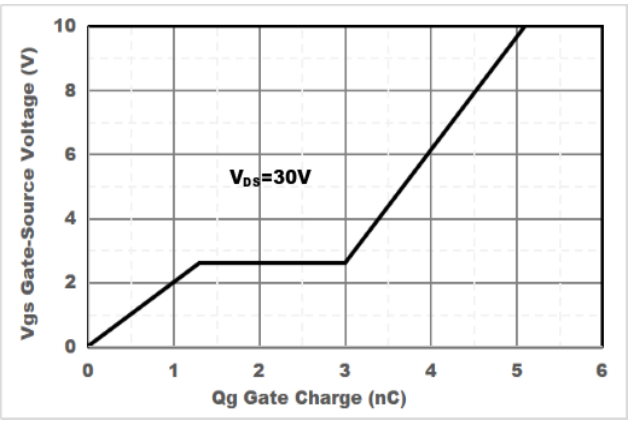


Figure4. Gate Charge

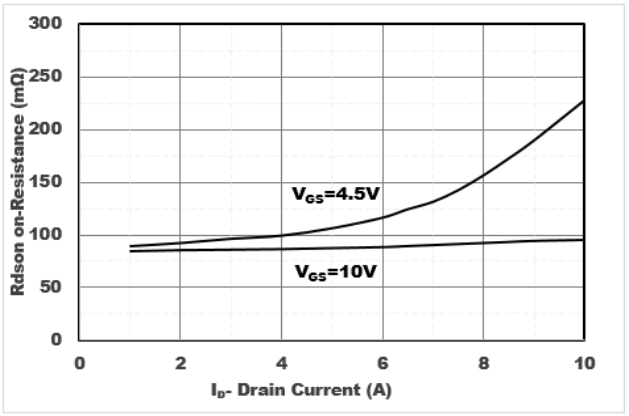


Figure5. Drain-Source on Resistance

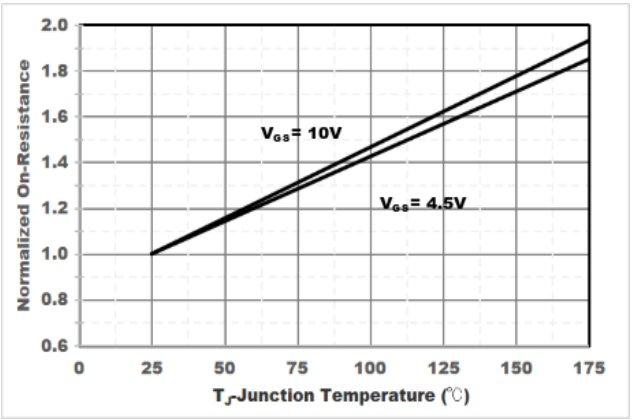


Figure6. Drain-Source on Resistance

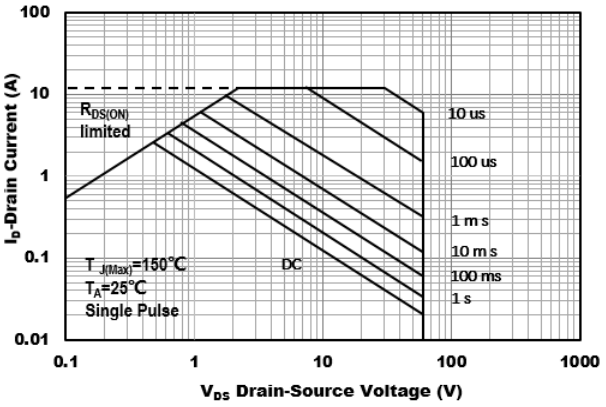


Figure7. Safe Operation Area

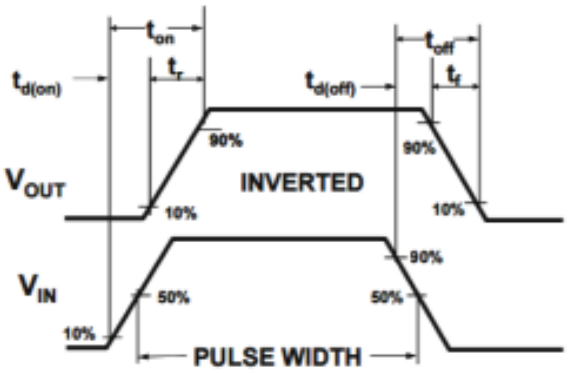
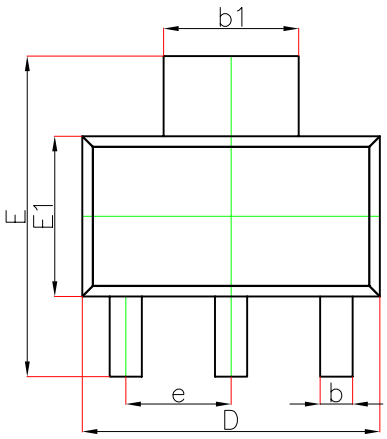
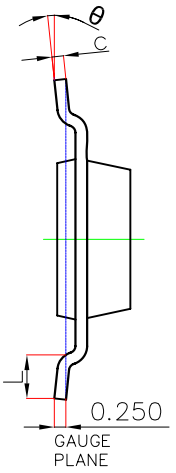
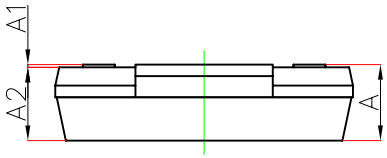


Figure8. Switching wave

■ SOT-223 Package information

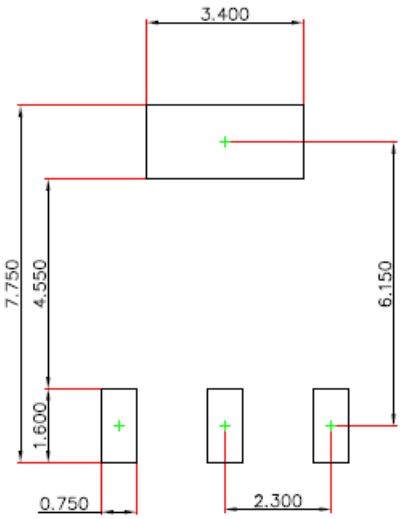






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	——	1.800	——	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091(BSC)	
L	0.750	——	0.030	——
θ	0°	10°	0°	10°

■ SOT-223 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.050mm.
3.The pad layout is for reference purposes only.

ENTEGRECİ

Bu belge www.entegreci.com üzerinden sunulmaktadır.

Elektronik komponent tedarikinde Entegreci

Entegreci, Eskişehir merkezli, Türkiye geneline satış yapan bir elektronik komponent mağazasıdır. Entegreler (IC), mikrodenetleyiciler, transistörler, diyotlar, pasif elemanlar, konnektörler, modüller ve geliştirme kartları tek adetten seri üretim adetlerine kadar satılır. Ürün sayfalarında güncel stok durumunu, fiyatı ve datasheet bağlantısını bulabilirsiniz.

Parça koduyla arama

Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

www.entegreci.com

Ürün kategorileri

Entegreden kapasitöre tüm elektronik komponent kategorileri.

Kategorilere göz atın

Üreticiler

Aradığınız üreticinin ürünlerini tek sayfada inceleyin.

Üreticileri görün

Toplu alım ve teklif

Listede olmayan ya da yüksek adetli parçalar için teklif isteyin.

Teklif isteyin

www.entegreci.com | **destek@entegreci.com** | **0850 305 90 34**

Entegreci is an online electronic components store based in Türkiye. Search by manufacturer part number to see stock, prices and datasheets for integrated circuits, microcontrollers, transistors, passive components and connectors, or request a quote for parts that are not listed.

Bu sayfa Entegreci tarafından eklenmiştir. Belgenin önceki sayfaları asıl yayıncısına aittir ve içeriği değiştirilmemiştir; en güncel sürüm için belgenin yayıncısına başvurun.