

Plastic-Encapsulate Transistors

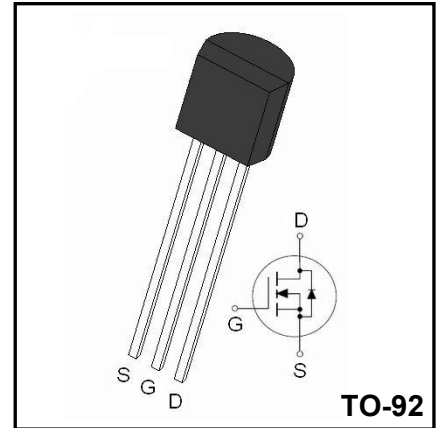
N-Channel Enhancement Mode Field Effect Transistor

General Description

Use in relay, high-speed and linetransformer drivers.

Features

- ◆ Low RDS(on)
- ◆ Direct interface to C-MOS, TTL, etc.
- ◆ High-speed switching
- ◆ No secondary breakdown.


Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Value	Unit
Drain-Source voltage	V _{DSS}	60	V
Drain-Gate Voltage (R _{GS} < 1 MΩ)	V _{DGR}	60	V
Gate-Source Voltage	V _{GSS}	±20	V
Continuous Non Repetitive (tp < 50μs)		±40	
Maximum Drain Current	I _D	200	mA
Continuous Pulsed		500	
Collector Power Dissipation	P _D	400	mW
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55~150	°C

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = 10 μA, V _{GS} = 0 V	60			V
Gate - Body Leakage, Forward	I _{GSSF}	V _{GS} = 15 V, V _{DS} = 0 V			10	nA
Gate - Body Leakage, Reverse	I _{GSSR}	V _{GS} = -15 V, V _{DS} = 0 V			-10	nA
ON Characteristics (Note)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 1 mA	0.8		3	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10 V, I _D = 500 mA		1.2	5	W
Drain-Source On-Voltage	V _{DS(ON)}	V _{GS} = 10 V, I _D = 500 mA V _{GS} = 4.5 V, I _D = 75 mA			2.5 0.4	V
On-State Drain Current	I _{D(ON)}	V _{GS} = 4.5 V, V _{DS} = 10 V	75			mA
Forward Transconductance	g _{FS}	V _{DS} = 10 V, I _D = 200 mA	100			
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 25 V, V _{GS} = 0 V, f = 1.0 MHz				
Output Capacitance	C _{oss}	V _{DS} = 5 V, V _{GS} = 0, f = 1MHz		0.65		pF
Reverse Transfer Capacitance	C _{rss}					
Turn-On Time	ton	V _{DD} = 15 V, R _L = 25 W, I _D = 500 mA, V _{GS} = 10 V,			10	ns
Turn-Off Time	toff	R _{GEN} = 25Ω			10	ns

Note: Pulse Test: Pulse Width < 300μs, Duty Cycle < 2.0%.

Package Dimensions

TO-92

Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	3.30	3.70	0.130	0.146
A1	2.30	2.70	0.091	0.106
b	0.40	0.50	0.016	0.020
b1	0.50	0.70	0.020	0.028
c	0.35	0.45	0.014	0.018
D	4.45	4.70	0.175	0.185
E	4.40	4.65	0.173	0.183
e	1.17	1.37	0.046	0.054
e1	2.34	2.64	0.092	0.104
L	13.50	14.50	0.531	0.571
L1	1.80	2.20	0.071	0.087

Package	Packing Method	Pack uantity
TO-92	Bulk	1000pcs/Bag
TO-92	Tape	2000pcs/Box