

# DATA SHEET

## **PMBF5484; PMBF5485; PMBF5486** N-channel field-effect transistors

Product specification  
File under Discrete Semiconductors, SC07

April 1995

**N-channel field-effect transistors**

**PMBF5484;  
PMBF5485; PMBF5486**

**FEATURES**

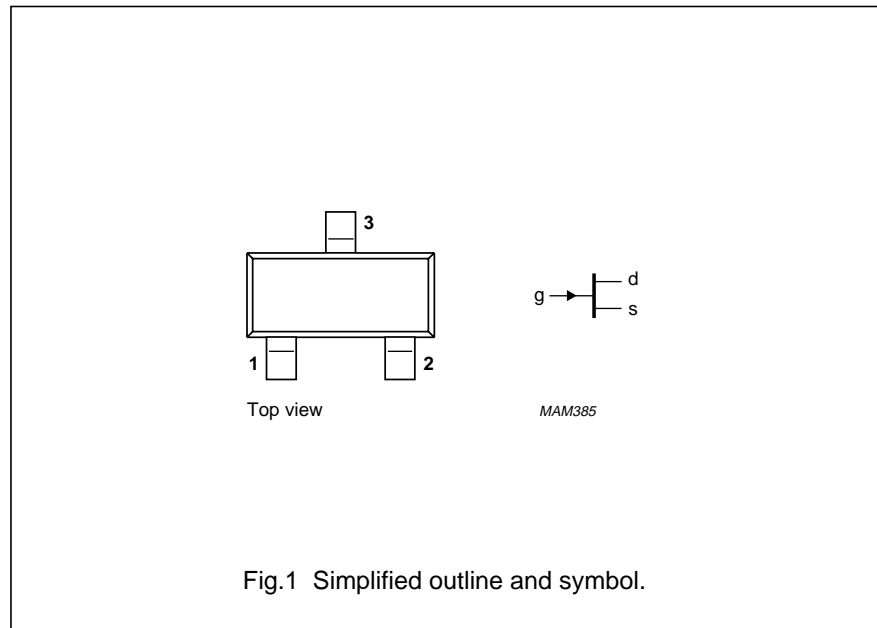
- Low noise
- Interchangeability of drain and source connections
- High gain.

**DESCRIPTION**

N-channel, symmetrical, silicon junction FETs in a surface-mountable SOT23 envelope. Intended for use in VHF/UHF amplifiers, oscillators and mixers.

**PINNING - SOT23**

PIN	DESCRIPTION
1	source
2	drain
3	gate



**MARKING CODES:**

PMBF5484: p6B  
 PMBF5485: p6M  
 PMBF5486: p6H

**QUICK REFERENCE DATA**

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{DS}$	drain-source voltage		-	25	V
$I_{DSS}$	drain current PMBF5484 PMBF5485 PMBF5486	$V_{DS} = 15\text{ V}; V_{GS} = 0$	1 4 8	5 10 20	mA mA mA
$P_{tot}$	total power dissipation	up to $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	250	mW
$V_{GS(off)}$	gate-source cut-off voltage PMBF5484 PMBF5485 PMBF5486	$V_{DS} = 15\text{ V}; I_D = 1\text{ nA}$	-0.3 -0.5 -2	-3 -4 -6	V V V
$ Y_{fs} $	common source transfer admittance PMBF5484 PMBF5485 PMBF5486	$V_{DS} = 15\text{ V}; V_{GS} = 0; f = 1\text{ kHz}$	3 3.5 4	6 7 8	mS mS mS

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In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{DS}$	drain-source voltage		–	25	V
$V_{GSO}$	gate-source voltage		–	–25	V
$V_{GDO}$	gate-drain voltage		–	–25	V
$I_G$	DC forward gate current		–	10	mA
$P_{tot}$	total power dissipation	up to $T_{amb} = 25\text{ °C}$ (note 1)	–	250	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C

**THERMAL RESISTANCE**

SYMBOL	PARAMETER	THERMAL RESISTANCE
$R_{th\ j-a}$	from junction to ambient (note 1)	500 K/W

**Note**

1. Device mounted on an FR4 printed-circuit board.

**STATIC CHARACTERISTICS** $T_j = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{(BR)GSS}$	gate-source breakdown voltage	$V_{DS} = 0$ ; $I_G = -1\ \mu\text{A}$	–25	–	V
$I_{DSS}$	drain current PMBF5484 PMBF5485 PMBF5486	$V_{DS} = 15\text{ V}$ ; $V_{GS} = 0$	1 4 8	5 10 20	mA mA mA
$I_{GSS}$	reverse gate leakage current	$V_{DS} = 0$ ; $V_{GS} = -15\text{ V}$	–	–1	nA
$V_{GSS}$	gate-source forward voltage	$V_{DS} = 0$ ; $I_G = 1\text{ mA}$	–	1	V
$V_{GS(off)}$	gate-source cut-off voltage PMBF5484 PMBF5485 PMBF5486	$V_{DS} = 15\text{ V}$ ; $I_D = 1\text{ nA}$	–0.3 –0.5 –2	–3 –4 –6	V V V
$ Y_{fs} $	common source transfer admittance PMBF5484 PMBF5485 PMBF5486	$V_{DS} = 15\text{ V}$ ; $V_{GS} = 0$	3 3.5 4	6 7 8	mS mS mS
$ Y_{os} $	common source output admittance PMBF5484 PMBF5485 PMBF5486	$V_{DS} = 15\text{ V}$ ; $V_{GS} = 0$	– – –	50 60 75	$\mu\text{S}$ $\mu\text{S}$ $\mu\text{S}$

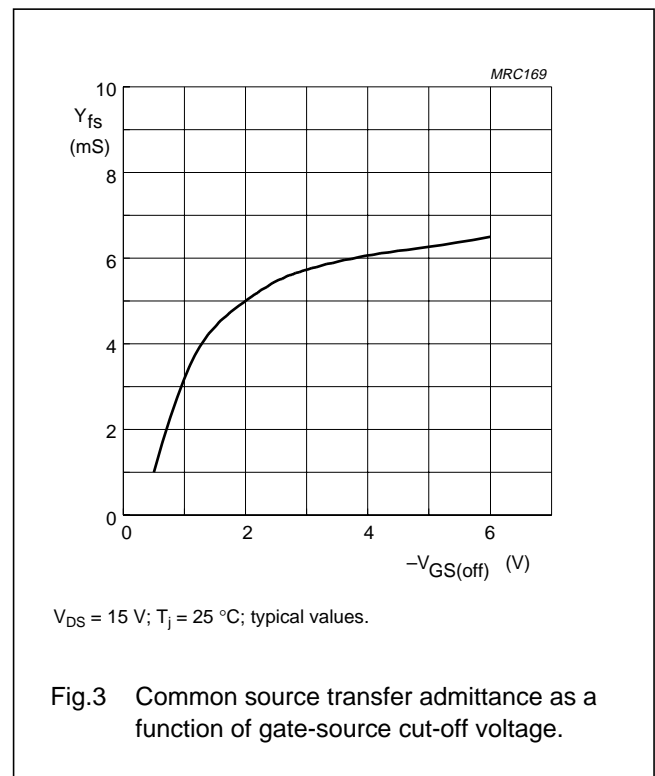
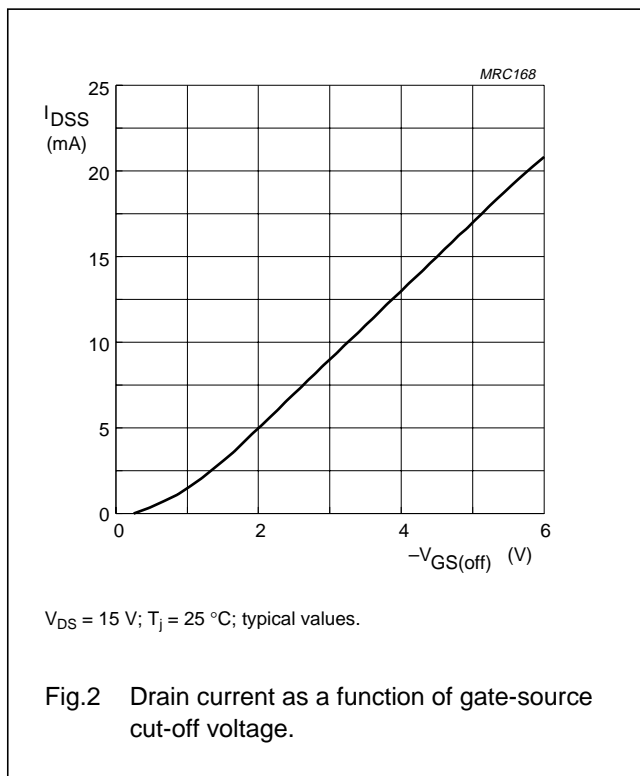
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**DYNAMIC CHARACTERISTICS**

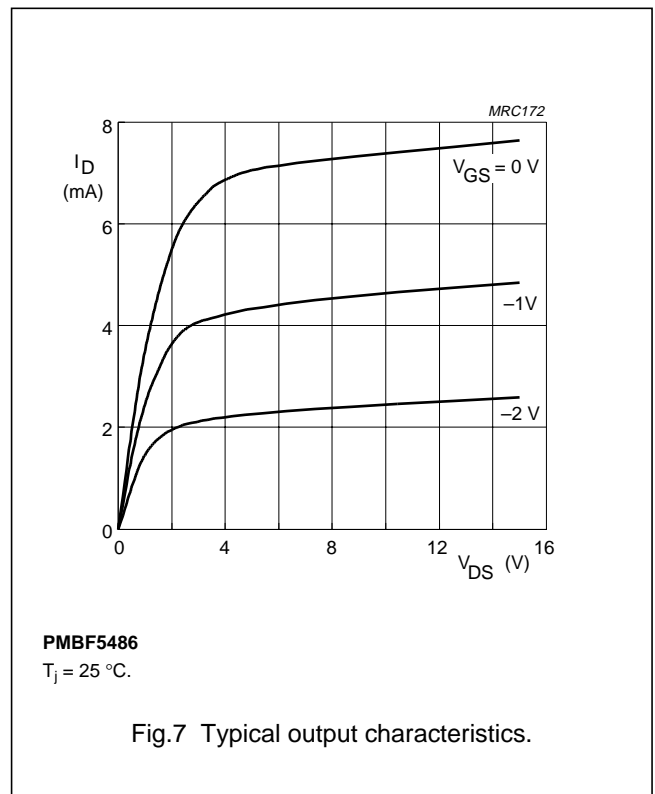
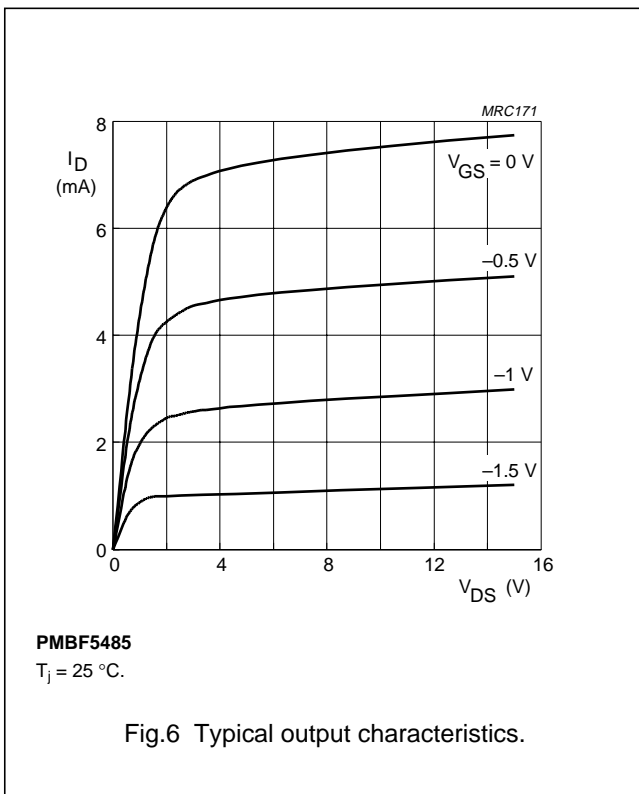
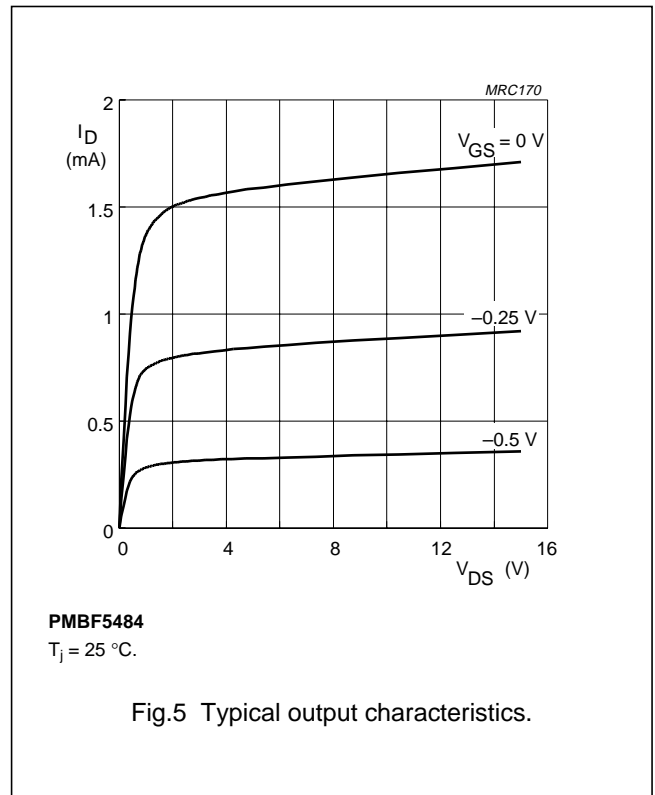
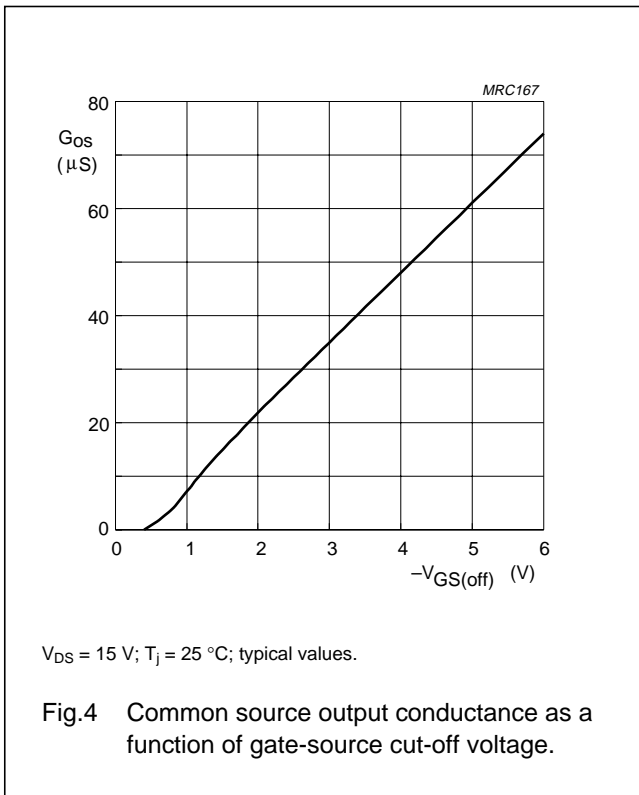
$T_j = 25\text{ }^\circ\text{C}$ ;  $V_{DS} = 15\text{ V}$ ;  $V_{GS} = 0$

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$C_{is}$	input capacitance	$f = 1\text{ MHz}$	–	–	5	pF
$C_{os}$	output capacitance	$f = 1\text{ MHz}$	–	–	2	pF
$C_{rs}$	feedback capacitance	$f = 1\text{ MHz}$	–	–	1	pF
$g_{is}$	common source input conductance					
	PMBF5484	$f = 100\text{ MHz}$	100	–	–	$\mu\text{S}$
	PMBF5485; PMBF5486	$f = 400\text{ MHz}$	–	–	1	mS
$g_{fs}$	common source transfer conductance					
	PMBF5484	$f = 100\text{ MHz}$	2.5	–	–	mS
	PMBF5485	$f = 400\text{ MHz}$	3	–	1	mS
	PMBF5486	$f = 400\text{ MHz}$	3.5	–	1	mS
$g_{os}$	common source output conductance					
	PMBF5484	$f = 100\text{ MHz}$	–	–	75	$\mu\text{S}$
	PMBF5485; PMBF5486	$f = 400\text{ MHz}$	–	–	100	$\mu\text{S}$
$V_n$	equivalent input noise voltage	$f = 100\text{ Hz}$	–	5	–	nV/ $\sqrt{\text{Hz}}$



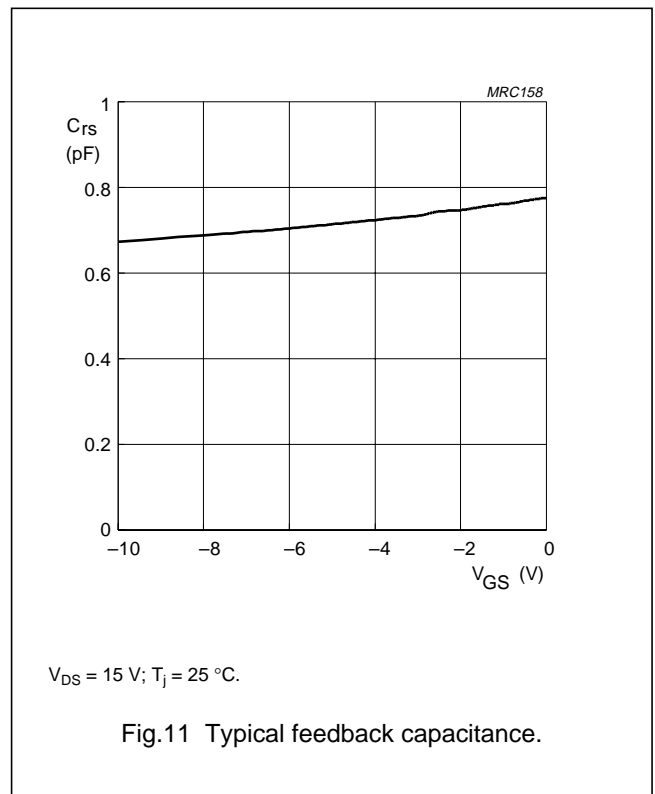
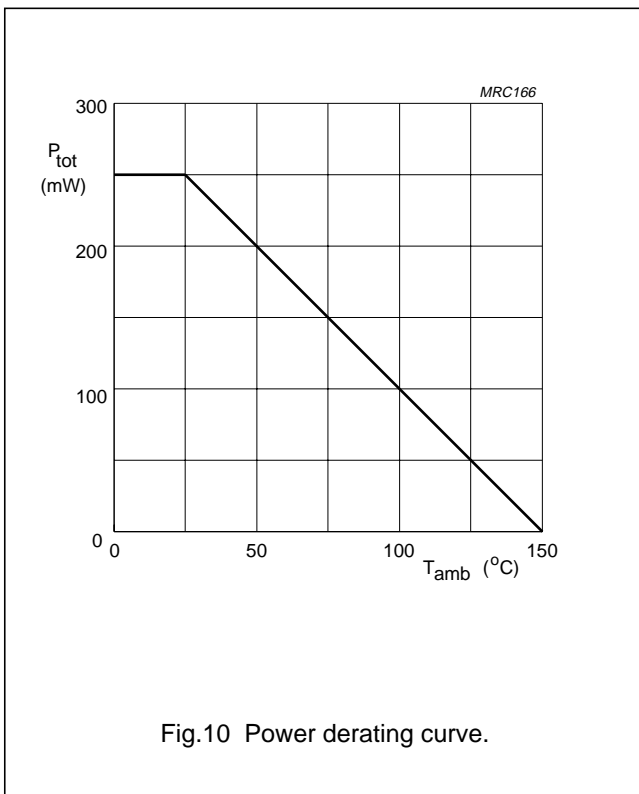
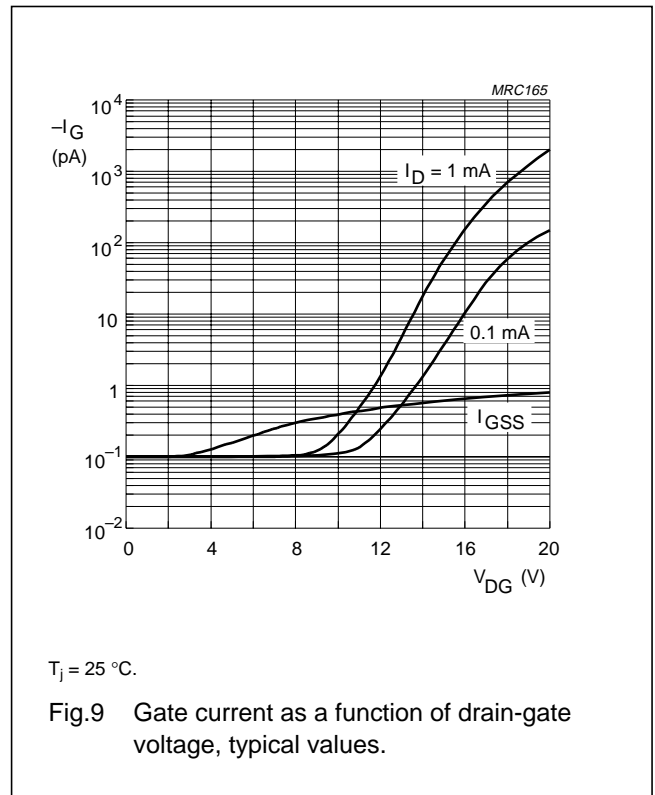
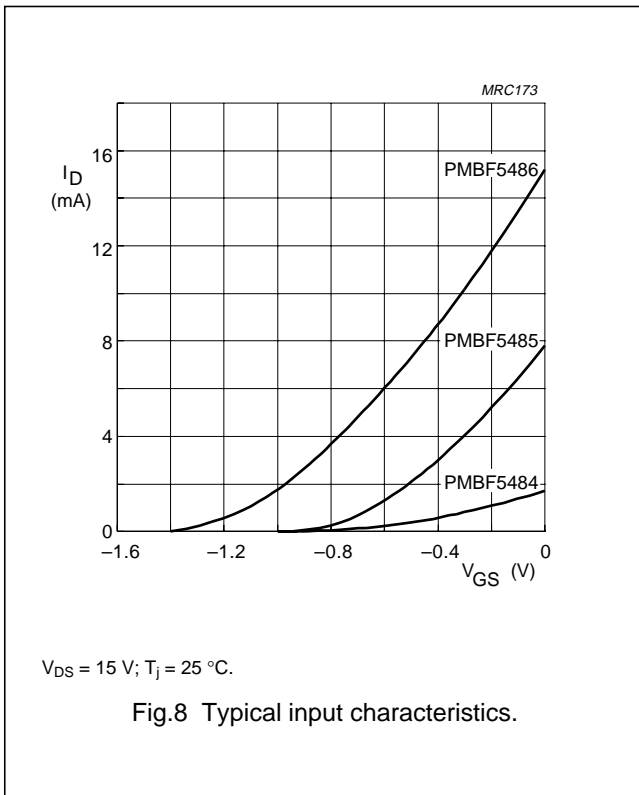
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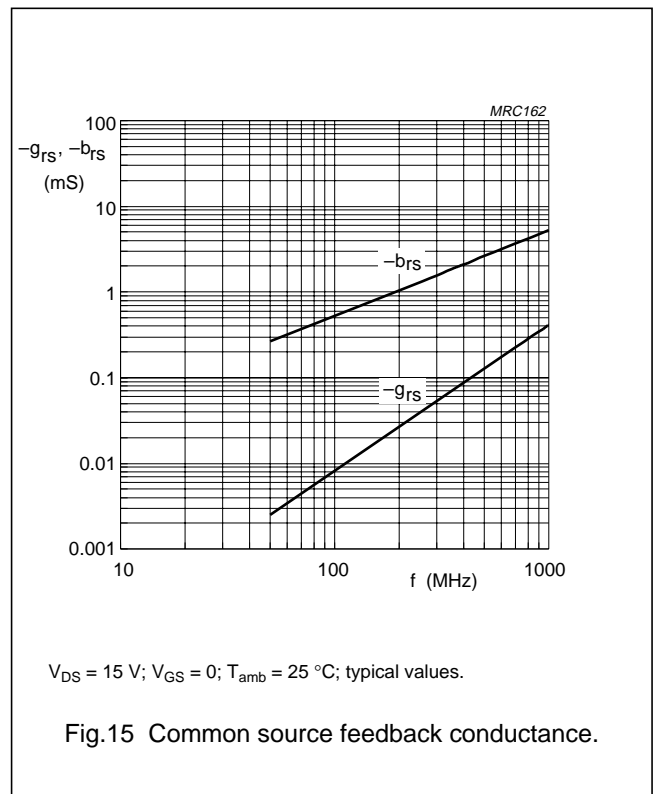
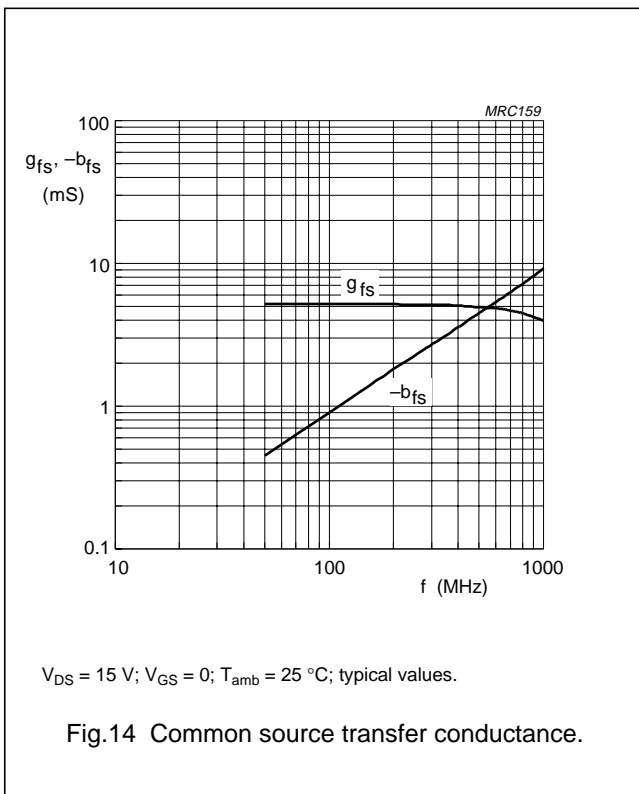
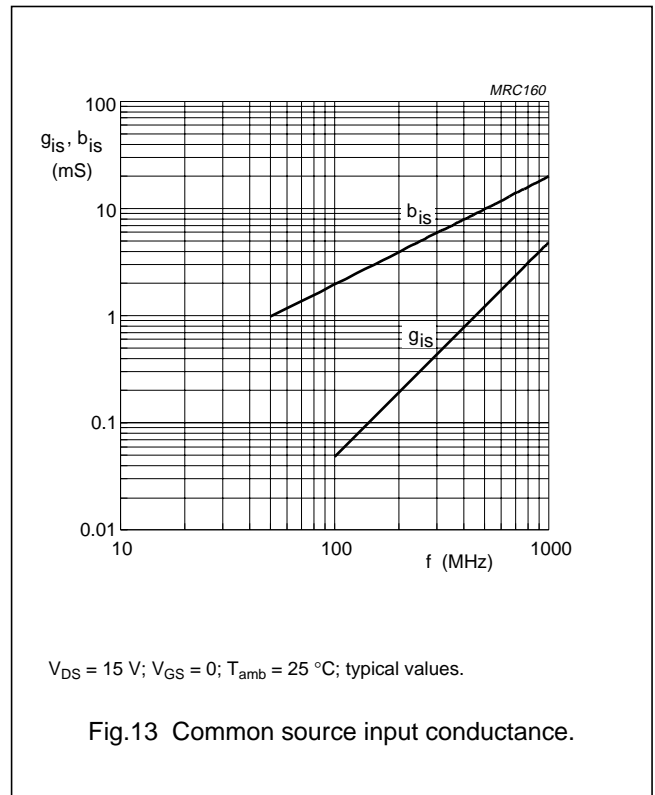
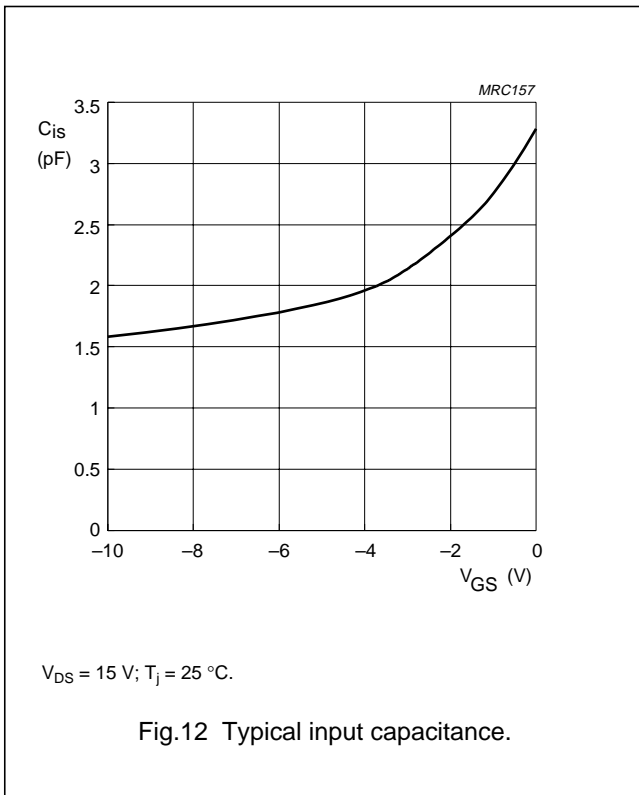
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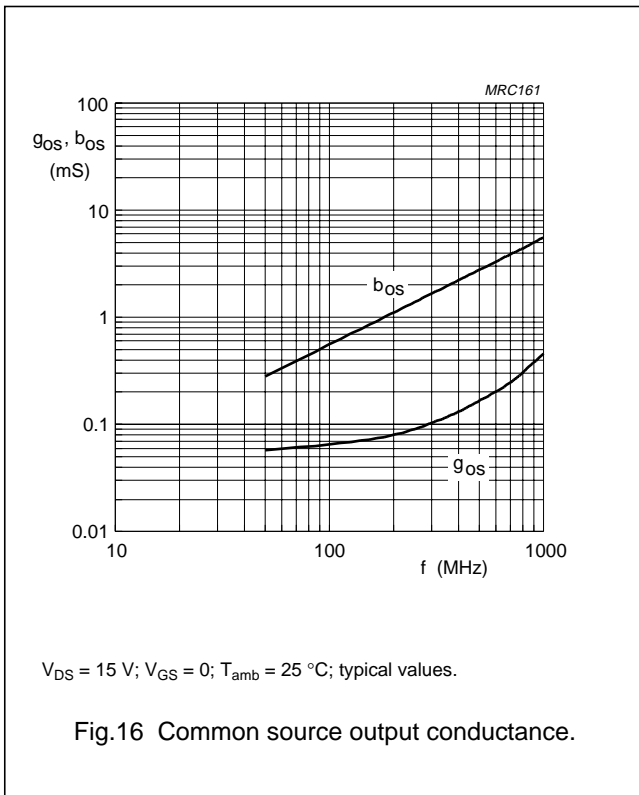
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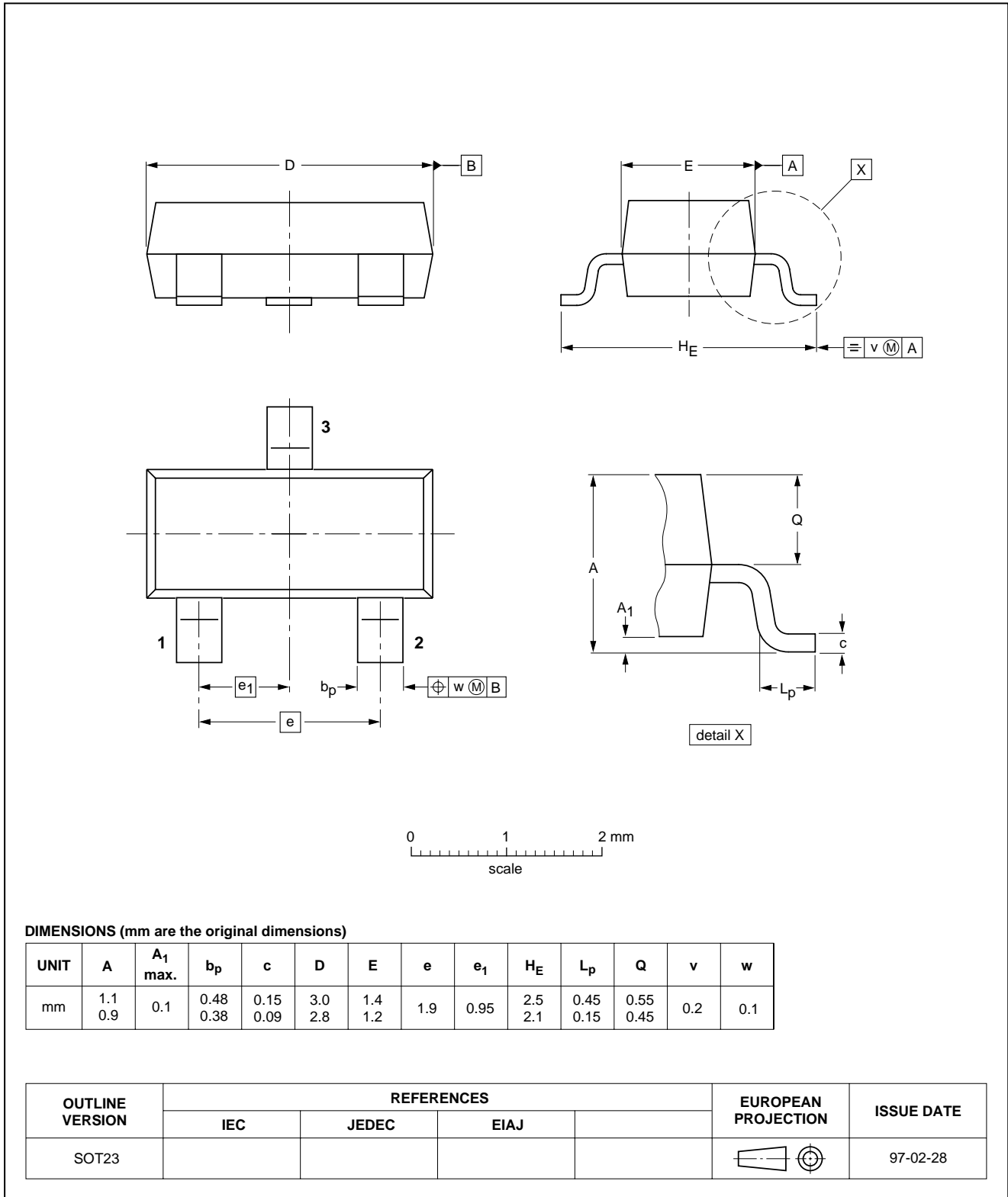
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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



## N-channel field-effect transistors

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<b>Data sheet status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Short-form specification	The data in this specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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